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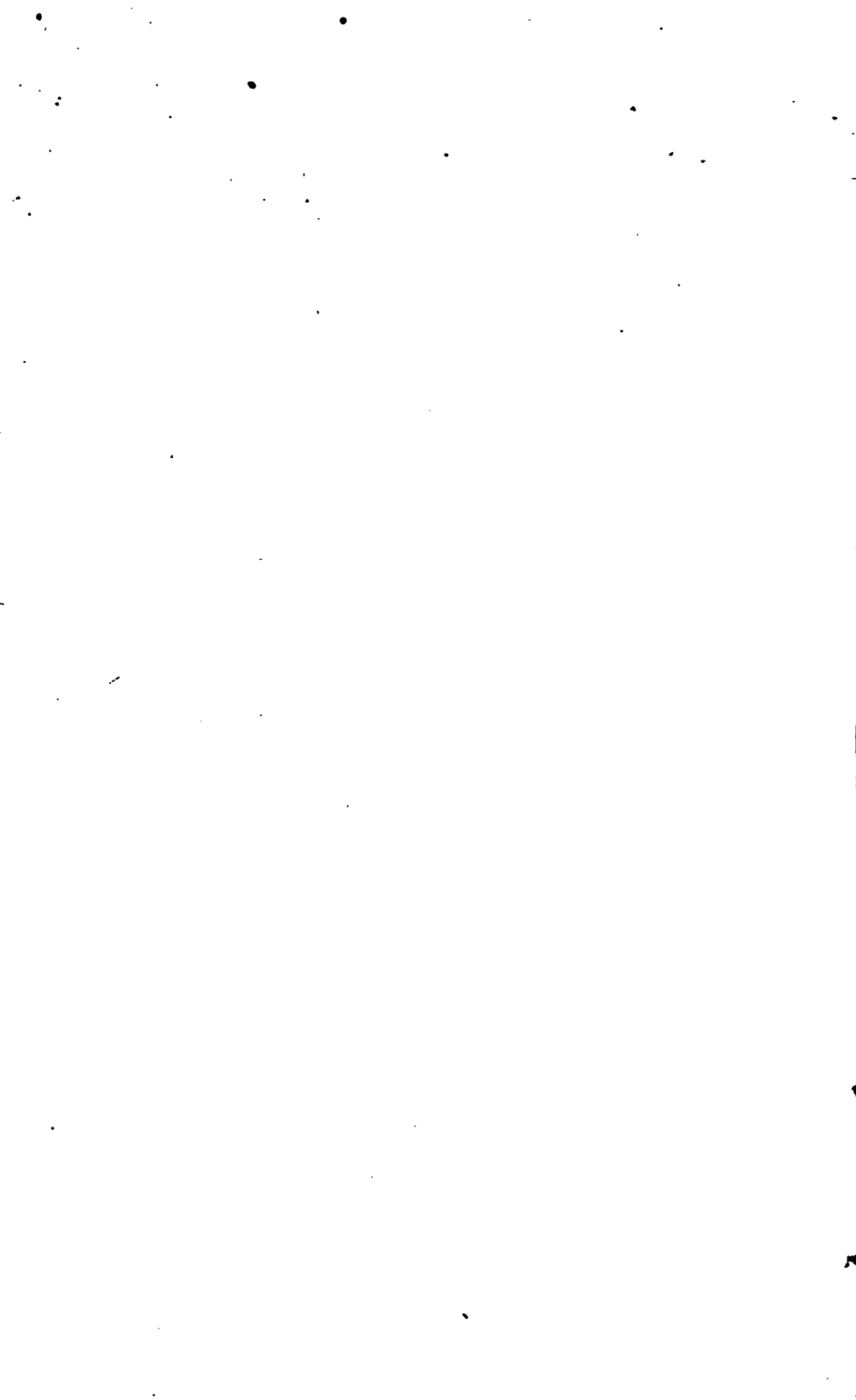
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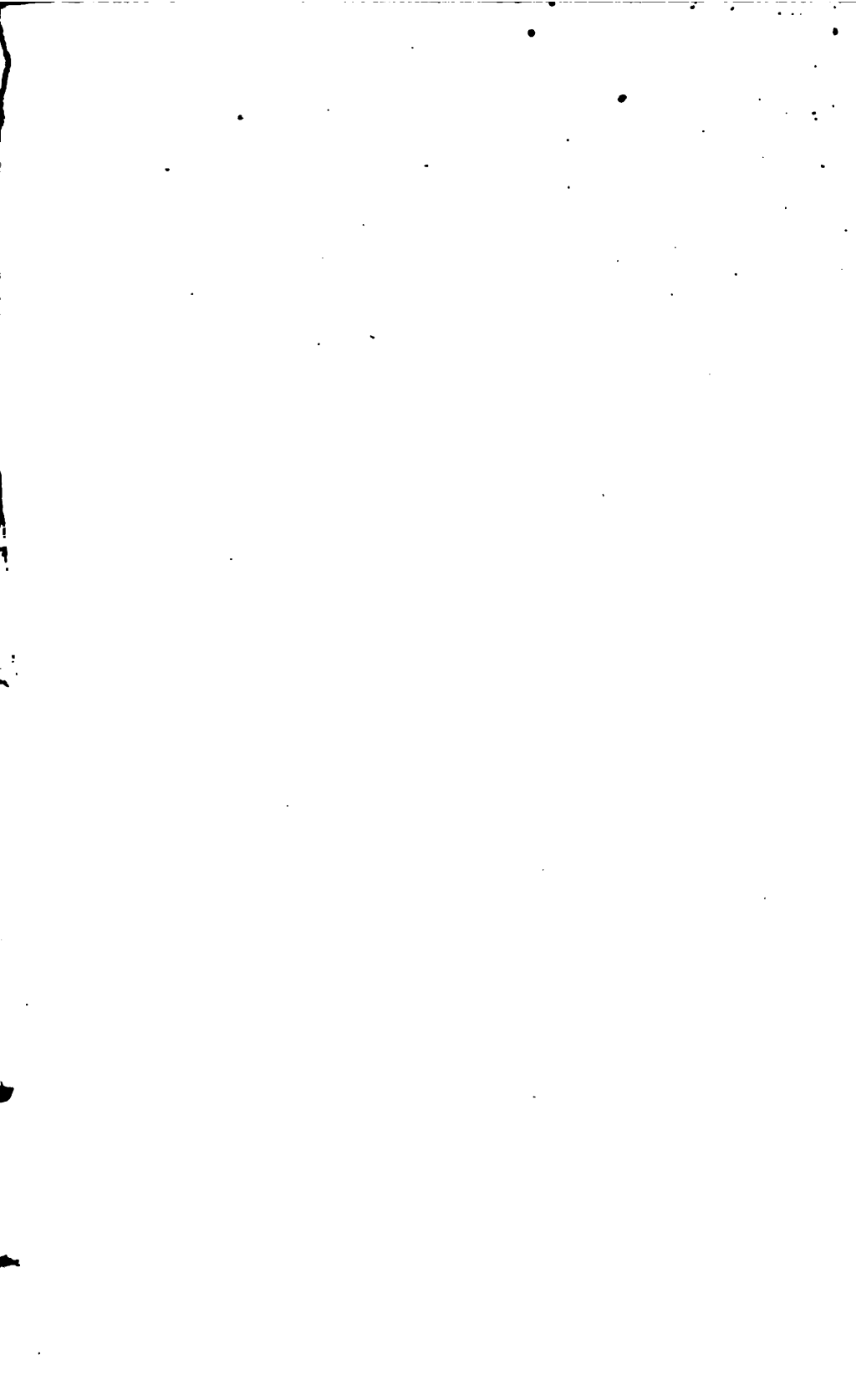
CHARLES ELIOT PROFESSOR OF LANDSCAPE ARCHITECTURE

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THE MAGAZINE
OF
HORTICULTURE,
BOTANY,
AND ALL USEFUL DISCOVERIES AND IMPROVEMENTS IN
RURAL AFFAIRS.

"Je voudrais échauffer tout l'univers de mon gout pour les jardins. Il me semble qu'il est impossible qu'un marchand puisse l'avoir. Il n'est point de vertus que je ne suppose à celui que aime à parler et à faire des jardins. Pères de famille, inspirez a jardinomanie à vos enfans."—*Prince de Ligne*.

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THE MAGAZINE OF HORTICULTURE.

THE PROGRESS OF HORTICULTURE.

A SUMMARY of the horticultural progress of the year, though presenting nothing of marked importance, offers much of interest to the enthusiastic cultivator, both in recalling subjects which demand more reflection, and in suggesting others which should occupy his attention. Horticulture, in its extensive sense, comprehends a wide range of objects, and every zealous lover of the science gladly welcomes all the aid which may lead him to a higher appreciation of its importance, and better enable him to study its details, or acquire greater perfection in its practice. There are subjects which occasionally attract unusual notice, and nearly every year some particular subjects more than others. Thus, for the last year or two, hardy grapes and their varieties, as well as dwarf pears and their culture, have been the leading topics with our pomologists; and with the agriculturists, the Sorgho, or Chinese Sugar Cane, has been the principal subject of attention; the details of its growth, and the manufacture of syrup, having filled the papers devoted to the interests of the farmer. To sum up the progress of the year in these prominent matters, as well as to pass in review others of less importance, is the object of our article.

The early period of the year opened with a more than usual degree of interest in the gardening world. The apparently secure and prosperous condition of our commerce, and the accumulation of wealth in and around our principal cities, had begun to develop itself in the erection of magnificent buildings, and the formation of extensive gardens; the former, in the highest style of architectural art, and the latter, with all the means and appendages of the palatial residences

of modern Europe, though, we regret to say, with very little of the same taste in the formation or arrangement of their grounds, this being of the least consideration. But a sudden revulsion in the commercial world has checked in a great degree the further prosecution of such magnificent plans, and the close of the year witnesses a change of things sadly contrasting with the commencement. Gardens and grounds laid out on an extensive scale remain unfinished, and the general depression has cut short such anticipated improvements as the construction of greenhouses and graperies, and the planting of orchards and pleasure grounds.

Yet, in this state of things, the cultivator may well inquire who is so well off as himself. His lands remain; his crops were never better. Like some riches the former have not taken wings and flown away, nor, with due industry, have the latter suspended. They are not like railroad or fancy stocks, whose sudden depreciation has involved many a rich and prosperous man in almost utter ruin. Well may he be thankful that he has contented himself with the sure and less rapid gains derived from that true source of wealth, the ever-teeming earth. For, though his occupation does not,—and probably never will,—afford the great profits which result from the bold, or even more careful, operations in commercial pursuits, it yields him the greatest of all riches, a happy and quiet life, and the enjoyment of all that nature has so bountifully lavished about him. It is the propensity of our people to trade, in preference to agricultural pursuits, that has caused to a considerable extent the revulsions in our commercial affairs, and it will continue to do so just as long as the desire pervades our farmers' boys to exchange their pleasant country homes and the occupation of their fathers for the show, the excitement, the dissipation and anticipated wealth of city life. Agriculture is a liberal pursuit; and if many that are engaged in it do not appreciate it as such, it is because they do not recognize the industry and study which are inseparable from its successful practice. From the erroneous opinion, so generally prevalent, that the "learned professions" and mercantile pursuits have a more elevated standing in society than the agriculturist, arises much of

the uneasiness of country life, and the desire to rush into occupations already filled to overflowing, simply from the absurd idea of respectability. Let this once be understood as a most mistaken notion—quite American—recognized nowhere else, and homes will not be transferred so rapidly to the city, nor the intelligent and healthful employments of the farm and garden be changed for those of the bar or counting room.

A rapid review of the weather of the year we deem of sufficient importance to occupy a brief space, more especially as it embraces a period of unusual severity, and attended with disastrous consequences to the horticulturist.

January was a very cold month. It commenced mild, with a heavy fall of snow, but on the 8th the temperature fell to 2° below zero, and continued cold; the 16th it was 4° below zero; the 18th, 12° below, and the 19th, 2° below, with a cold driving snow, which fell to the depth of nearly 20 inches, though greatly drifted. This was a cold fortnight, but on the 23d the mercury fell to 14° below zero, and on the 24th it reached the lowest point we have ever seen it, viz., 20° below. The 25th it was 8° below, and the 26th, 10° below. It was milder the rest of the month.

The month of February was milder than the average, with the thermometer below zero but twice, which was on the 11th and 12th. The residue of the month was unusually mild. On the 15th the snow was nearly all gone, and the temperature reached 50° at noon, and for three successive mornings it stood at the same point. The 18th the thermometer was as high as 68°!

March was also a mild month; the lowest range of the thermometer being 8°. Only a few inches of snow fell, and the latter part was pleasant, showery and spring-like.

April began severe, with a lower temperature than March, with the exception of two mornings. The 1st and 2d were very cold, and accompanied with snow, but on the 3d a warm southerly rain fell, with the thermometer at 50°, which took all the frost out of the ground, and left it in good order for planting. The rest of the month was pleasant, with very light frosts.

The month of May was favorable, without hard frosts or excessively warm days. On the 7th the cherries were in bloom, and the pears on the 13th. After this it was cool and cloudy. The first very warm day was on the 25th, when the thermometer stood at 85°.

June commenced warm and showery, but this was soon followed by cool weather, which continued with but little variation to the end of the month, the highest range of the thermometer being 85°.

July opened very much like June, with cool easterly winds. On the 8th it was warmer, and on the 15th the mercury reached 92°. Up to the 21st it had been rather dry, but the remainder of the month was showery and rainy.

After so much cool and moist weather it was anticipated that a dryer month would succeed; but August continued not only quite cool, but very wet, with the thermometer above 90° but once, on the 14th.

September was a pleasant month; the early part was fine and warm, but on the 8th the temperature fell to 38°, and in some localities there was a slight frost. After this it was warm again, with showers. The close of the month was cooler. On the 29th the mercury fell to 30°, with a heavy white frost, which injured all tender plants in exposed localities.

October was fine nearly throughout, with no heavy frosts until the 26th, when the temperature fell to 26°, which froze the ground to the depth of an inch. After this it was cloudy and cooler.

The month of November continued mild, with no heavy frosts until the 15th. The lowest temperature was 14°, on the 28th. The last few days were very mild.

December thus far (the 20th) has been unusually mild and pleasant, without snow, or frosts of sufficient severity to put a stop to outdoor work. The thermometer has fallen below the freezing point but three times, and then but for a few hours' duration. The ground is now in as fine condition as in the month of April. This weather appears in strong contrast with that of 1856, when at the same date the mercury fell to 7° below zero.

The winter of 1855 and 1856 was one of unusual severity at the West, doing immense damage to fruit trees of all kinds, killing, in many instances, plantations of many years' standing, and its disastrous effects will long be remembered. That of 1856 and 1857, though not, perhaps, equally severe, will, however, long be remembered by the cultivators of New England, having been more injurious to trees than any winter since the memorable one of 1835. In Maine the damage to trees was very great, killing many outright of several years' growth; the Bartlett and other of the more tender pears suffering the most. What appears to be one peculiarity, so far as our experience goes, was the death of pears on the *pear* stock, the quince suffering little or none, showing conclusively that it is quite as hardy as the pear, and much better capable of sustaining frost in damp localities, where the pear invariably suffered. Another peculiarity was the almost entire exemption from injury of the peach buds, notwithstanding the thermometer stood at 20° below zero. Heretofore it has been believed, and we have latterly given currency to the idea, that 12° below zero was the point at which the germ of the peach buds was likely to be destroyed. The experience of the past winter quite upsets this theory, evidently showing it is not the *intensity* of the frost that does the injury, but the condition of the weather before or afterwards, or the period of the winter when it occurs. The same trees which in 1855 and 1856 lost about all their buds when the mercury fell to 12° below, now produced a full crop.

As regards fruit generally, the season has not been very favorable. Apples in some localities bore tolerably well, but in New England the crop has been very light. Pears were not near up to the average. Cherries suffered from the winter, and from the cool and damp summer. Grapes were a failure, the vines mildewing badly, and the crop not coming to maturity before frost. Of all the fruits the pear gave the best results this year, as it did the last.

HORTICULTURE.

The prominent topics of discussion, both in the Gardening Journals and Pomological Conventions, have been the culture

of dwarf pears, and their profitable growth on an extensive scale. In our last volume we answered all the objections which had been brought against the quince stock, and, with the able article of Col. Wilder in its favor, (p. 211,) have very little to say in addition. Those who reject dwarf trees, have either had no experience in their culture, and do not understand their treatment, or they have been experimenting with those kinds, of which there are many, which will not succeed upon the quince. Some attempts have been made to rebut the evidence in favor of dwarf pears; but they have been such a mixture of conceit and ignorance, on the part of the writers, that with sensible cultivators they have not had the least weight, and have rather confirmed than diminished their confidence in dwarf pears. In the vicinity of Boston, where the pear is grown to the greatest perfection, both the specimens of fruit and specimens of trees triumphantly vindicate the success that has attended the numerous experiments which have been made through a series of more than twenty-five years, rewarding our amateurs with the finest crops, and supplying the market with finer fruit and in larger quantities than can be found in any part of the country.

The interest in the cultivation of hardy grapes and the introduction of new varieties continues undiminished; some new sorts have been brought to notice the past year, which have been mentioned in our pages. This interest, once thoroughly awakened, will not be allowed to dwindle until we are supplied with a selection of kinds, suitable to all the vicissitudes of our changeable climate, and of a quality greatly superior to most of those we now possess. A cool and unfavorable year has prevented the perfect ripening of many new varieties under process of trial, so as to judge fairly of their quality; but another year will we trust afford us an opportunity to do so. We may safely congratulate our amateurs on the possession of some very fine grapes.

The gooseberry, a fruit of so much importance in English gardens, holds a very inferior rank in our American collections. Owing to the tendency of all the foreign varieties to mildew, their cultivation has been neglected, and only in the gardens of the more enthusiastic cultivators are they to be

found. Yet a fruit which is found indigenous to our country ought to succeed everywhere, and there is no reason why we should not, and speedily too, possess American seedlings that may be cultivated with all the ease of other fruits. It is with pleasure, therefore, that we have recently referred (p. 516) to the growth of two new seedlings, which, from the account of them, appear to possess merits quite equal, if not superior to Houghton's seedling, which has so long maintained its reputation. With care in the selection of seed we see no reason why our gardens should not soon be supplied with new varieties, with as large fruit as those which attract so much attention in Great Britain. When we once produce such seedlings, and raise them in perfection, we are sure the gooseberry must become a much more esteemed fruit than it is at the present time in our American gardens.

The continued success in grape culture by Mr. Simpson, as already detailed in our last volume, on his new system of a crop every eight months, has attracted much attention, and elicited the praise of all who have witnessed the progress of the vines, and the superior fruit, as well as the abundance of the crop. Since our article appeared in February last, two more crops have ripened on the same vines, and in quite as good perfection as at the time of our visit. An interesting account of Mr. Simpson's grapery, on another page, will relieve us from the necessity of further remarks, other than to congratulate Mr. Simpson on his success, now having accomplished all he proposed, viz., six crops of grapes in four years.

New pears and pear culture, generally, have been made the subject of two interesting articles by M. de Jonghe and Mr. Rivers. That of M. de Jonghe is full of interest, and we have already urged our cultivators to give it their attention. Mr. Rivers, though more general in his notes, still offers some valuable hints respecting several of the newer pears. These, with the Intermediate Report of the American Pomological Society, and our Pomological Gossip, will give all the information relative to the growth and introduction of new pears, as well as other fruits.

One remark made by M. de Jonghe in relation to the growth

of seedling apples attracted our attention, and we intended to notice it at the time his article appeared, but overlooked it; we now recur to it. In speaking of his collection of apples he stated "that after having planted a collection of 200 sorts of apples, worked upon the Free, Doucin and Paradise stock, and which were obtained from the first establishments in Europe, and trained in whatever form appeared to suit them best, for 8, 10, or 15 years, from the very beginning perfect seeds of such of these varieties as appeared to be the best were commenced to be sown. The seedlings gave a more satisfactory result than the 200 varieties from which they were produced; that is to say, with four or five exceptions, the seedlings yielded finer and better fruit, and in greater abundance than all the other trees put together, of which we have been able, as yet, to see and taste the fruit."

By this we understand that seedling trees from the 200 named varieties, produced fruit quite equal to the original sorts, showing conclusively, according to M. de Jonghe's experiment, that the apple may be reproduced from seed with almost as much certainty as the commonest vegetable—a very important fact, if true, so much so as to deserve continued experiments, carefully made, to establish its truth. We confess that, though paradoxical as it may seem, it has a plausible appearance, judging from what we know of the apple. All our American varieties, so much superior to the foreign sorts, are accidental seedlings, produced mostly within the last forty, and many of them within the last ten, years. In fact, new kinds are coming to notice almost every day, and although all have not the excellence belonging to our best sorts, they undoubtedly equal if not surpass the 200 named varieties obtained by M. de Jonghe from the "first establishments in Europe." Witness the Northern Spy and Melon, raised in one orchard in Western New York, and the numerous good apples in the West, raised from seeds of the best Eastern apples which were carried there by the early settlers of that region. These facts go far to confirm M. de Jonghe's experiment.

Though we would not rely upon such means for obtaining a fine collection of apples, we would, at the same time, avail

ourselves of its importance. For instance, in cases of emigration to the far West, in remote localities, where trees are not easily to be carried, or means are not abundant to purchase them, a few seeds of select apples would supply the settler in a few years with an abundance of fine fruit, and the few, if any, which might not prove valuable would form excellent stocks to graft the better kinds upon. Viewed in no other way the confirmation of the experiment of M. de Jonghe demands the consideration of every orchardist.

We have but little space to devote to other matters of importance under this head, and must therefore refer our readers to the table of contents and index of the volume for details respecting new fruits, of which a great number have been described, and new facts regarding their culture.

FLORICULTURE.

The taste for flowers and plants, though continually increasing, does not make the same progress as that for fruits or hardy trees and shrubs. The rage for bedding plants has to some extent lessened the love for the old fashioned tenants of the garden, whose less dazzling tints, though more varied colors and stately appearance, are not less worthy of equal attention. Some of the latter, however, in their improved state, hold a prominent rank, and are becoming universal favorites. These are the phlox, the hollyhock, and the larkspur, each of which, in their numerous varieties, are being elevated to the florist's standard. The phloxes have been greatly improved by the French amateurs as well as our own cultivators, and the hollyhock, through the labors of the English gardeners mainly, has been brought to a state of perfection beyond belief, surpassing the dahlia as a decorative garden plant. The larkspurs, too, are becoming more and more popular, and exhibit a variety of tints and shades quite new and beautiful. With the aid of the brilliant *Delphinium cardinale*, no doubt we shall eventually possess some singularly pleasing colors.

But of all the flowers which appear to have yielded to the efforts of the hybridizer, the *Gladiolus* shows the most remarkable improvement. About twenty-five years ago, the

G. psittacinus was introduced to European collections from the Cape of Good Hope, and for more than ten years continued the only variety of this class of free summer bloomers. From it came the *G. gandavensis*, a much more brilliant flower, and since then a succession of new varieties has been produced, which now give this plant a prominent rank in every collection. The past season a collection of new seedlings was exhibited at the Crystal Palace, Sydenham, which attracted universal admiration, and at once rendered them especial favorites with all lovers of beautiful flowers. The French cultivators enumerate more than a hundred varieties of almost every shade of color, and a mixture of several in one flower, viz. : white, blush, straw, chamois, citron, sulphur, yellow, orange, cinnamon, scarlet, rose, vermilion, crimson, carmine, purple, violet, &c. Some flowers are distinctly and beautifully striped, and others shaded, spotted, or tinted in the most striking manner. We had some forty or fifty of the finest varieties in bloom the past summer, and unhesitatingly pronounce them the most attractive ornaments of the garden. They are of the easiest cultivation, and bloom profusely throughout August and September. Planted in masses, or in beds, they produce a brilliant effect, and are only equalled by the Japan lilies.

The articles on the Rose by Professor Page have no doubt been highly interesting to all lovers of this beautiful flower. Our amateurs do not truly appreciate this finest of garden shrubs. The new varieties, especially of hardy perpetuals, are rapidly increasing, and among them are some very striking and superb flowers, which are now becoming great favorites; such, for instance, as Jules Margottin, General Jacqueminot, Lord Raglan, Lion des Combats, Giant de Betailles, &c. But, fine as they are, in our cold climate, they must not, as we have urged before, be allowed to usurp altogether the place of the June roses, but rather be looked upon as auxiliaries to keep up a continued bloom to the end of the season. We notice that Mr. Rivers, in his latest Catalogue, states that in Scotland the June roses are so much hardier, that they are still very popular. The same remark will apply with us. But further South, where the winters are milder,

the perpetuals will give more satisfaction. To insure a good bloom the branches should be laid down and covered with soil or manure to protect them from severe frosts, which invariably injures the shoots, and, with many kinds, kills them to the ground.

We have heretofore spoken so highly of the Japan Lilies, that we need hardly occupy space to refer to them again; but as the idea is still current with many individuals that they are not hardy enough to be planted out in the open ground, we embrace the opportunity to repeat, that they are quite as easily managed as the common white lily, and flower much more freely after removal, being in fact of the easiest cultivation, only requiring a good light soil, not over saturated with moisture. Planted out in October or November, and protected with a thin covering of leaves, they make their appearance in the spring as vigorous as the hardiest lilies. No garden should be without a small bed of these truly elegant flowers.

We have in our Floricultural notes alluded to several of the new and rare plants of recent introduction, and to them we must refer for particular information concerning them. Among those which promise to be valuable acquisitions are the Gigantic Lily, the Pampas Grass, and *Phygelius capensis*. Neither have yet, we believe, flowered in American collections, but we hope to see them the coming season, especially the former, as the favorable notices of it lead us to anticipate a splendid object. The Lily tribe are exceedingly fine, but this seems to eclipse them all. Of other plants a reference to our index will show the variety noticed or described in the volume.

ARBORICULTURE.

We have continued in our last volume the series of articles we commenced in the previous one, describing the more rare ornamental trees, or such as are little known, or too much neglected: in all, sixteen trees. These do not, of course, embrace all the trees of this description, but they are the larger part, and we can only hope that the information which we have given will be the means of introducing them into every plantation. What we need is more variety in our pleasure grounds, and not the same succession of elms, maples, ailan-

thuses and limes, with occasionally a horsechestnut or an oak. There are many others equally as desirable as those we have described, and there is no reason for such a meagre selection, if the least judgment or pains are taken to secure a good variety.

We have given in the volume (p. 193) a list of the evergreen trees that we found to stand the severity of the last very cold winter, than which no better test could be required. The list may be safely relied upon, and we hope will serve as a guide to a good selection for all the various purposes of shelter, shade or ornament. What we need around our grounds in our exposed climate, is a far greater proportion of evergreens. We are but just beginning to appreciate their importance, either in a picturesque or economical point of view. In the former they give character and expression to the winter scenery by their deep green verdure and spiry form; and in the latter afford shelter and protection from winds and storms, and impart additional warmth to the soil. In England the planting of evergreens is the first consideration in the improvement of all grounds, whether for mere purposes of ornament or for general cultivation.

The papers by our correspondent, Mr. Flagg, describing our various hardy forest and ornamental trees, extending through our last two volumes, have been prepared with great care, and show a thorough acquaintance with their habits, growth, and general characteristics. A more complete account of them cannot, we think, be found in any publication, excepting Michaux's *Sylva*, and even there, the descriptions are more technical and less general than Mr. Flagg's, whose analysis of their varied beauties is given with the pen of the real lover of sylvan art. We hope to offer some account of the smaller shrubs, in the same manner he has described the larger trees. The vacciniums or whortleberries, which formed the subject of one of the most interesting papers in our last volume, are beautiful and desirable garden shrubs.

A series of articles describing our finest Evergreen trees, with engravings, in the same style we have illustrated our "Ornamental Trees," we have already promised, and shall endeavor to commence it in the present volume.

RURAL ARCHITECTURE.

It is gratifying to see an increased interest manifested in Rural Architecture, as apparent in the more refined taste displayed in the erection of villas and cottages, as well as churches and school-houses, and more particularly in the station-houses upon our numerous railroads, more especially in Massachusetts. The mere sheds or barn-like structures are being replaced with buildings which not only show some architectural taste, but a far greater degree of comfort in their interior arrangements. We have now passed through the initiatory stages of a better style, and when it shall have been a little purged of the "gingerbread finishings" which yet cling around it, our villas and cottages will add greatly to the picturesque beauty of the country, and give increased value to all estates where taste in design and execution has been displayed.

It is with pleasure that we announce the commencement of a series of articles on Home Architecture, in our next number, by Mr. Flagg. What he has already written on subjects immediately connected with our homes, is the best evidence of his fitness to perform the task in a manner that will interest all our readers, and advance the taste for rural art.

In garden architecture generally, and the construction of greenhouses and graperies, there is some improvement. But for the lack of builders who understand the arrangement of such structures, both with reference to the growth of the plants and architectural proportions, many of them still preserve the same unmeaning form and barren finish so common everywhere.

Some very fine greenhouses and graperies have been constructed within a year or two in the vicinity of Boston; and we hope we may have the opportunity of presenting plans and details of the same, with the view of aiding in introducing more architectural beauty in the erection of such buildings. It adds but little to the expense to adopt some tasteful style suited to the growth and health of the plants, and at the same time expressive of the object of such structures.

HORTICULTURAL LITERATURE.

There have been very few publications during the year. The only work of note has been **THE FRUITS AND FRUIT TREES OF AMERICA**, revised by Mr. C. Downing, and noticed in our last number. The first number of the third volume of the **FRUITS OF AMERICA** has appeared, and other numbers will soon be published. **THE PATENT OFFICE REPORT FOR 1856** is a considerable improvement upon the preceding ones, both in the character of the reports and general information, and in the typographical execution of the volume. **THE TRANSACTIONS OF THE MASSACHUSETTS STATE BOARD OF AGRICULTURE FOR 1856**, by Mr. C. L. Flint, the secretary, has been prepared with unusual labor and care, and contains very minute descriptions of all the principal grasses, with engravings; and will prove a most acceptable work to all interested in agriculture. New editions of **McMAHON'S GARDENING**, **Allen's TREATISE ON THE GRAPE**, and some other works have been published. The **ILLUSTRATED ANNUALS**, from the offices of the **Albany Cultivator** and the **Genesee Farmer**, are both small works of much interest to all who cannot readily obtain more complete treatises on the same subjects. The agricultural papers have been improved considerably, and the **OHIO FARMER**, one of the best, is to appear in a more convenient form for preservation.

OBITUARY.

In addition to the record we have already given we have to add the name of **JAMES D. FULTON**, nurseryman, of Philadelphia. He died very suddenly, in New Jersey, in his 43d year. Mr. Fulton was one of the most intelligent nurserymen. He served his time with Messrs. D. & C. Landreth, was subsequently foreman of the establishment, and after the relinquishment of business by Mr. T. Landreth, became a partner with his brother, Mr. D. Landreth. At the closing up of the business of this firm a few years later, Mr. Fulton established a nursery on his own account, and at the time of his death had considerably extended his grounds, and enjoyed a lucrative trade. His loss will be deeply regretted by all who had the pleasure of his acquaintance.

THE INFLUENCE OF FROST ON VEGETATION.

BY WILSON FLAGG.

THE advantages accruing to the vegetable world from hibernation are well understood ; but it is not yet determined how large a proportion of this benefit is due to the action of frost on the one hand, or to the mere physiological state of rest on the other. The apparent influence of freezing is injurious ; but it does not follow that plants may not, under certain circumstances, derive benefit from it. Freezing is evidently fatal to some plants, harmless to others, and apparently beneficial to a third sort. It is injurious to all deciduous foliage, but less so in the spring than in the summer and autumn. It has also been ascertained that some of the most tender plants may, by gradual exposure to cold, be frozen without injury, provided they be thawed under certain conditions of temperature. All plants are liable to suffer injury from the action of frost, in proportion as their sap vessels are surcharged with fluid. Hence trees are sometimes cracked in the winter, when a very severe cold succeeds weather so mild as to have caused the circulation of the sap.

The first effect observed from the action of frost upon a tender vegetable, is the breaking down of the cellular organization, probably from the rupture occasioned by the swelling of the sap, consequent upon freezing. But freezing produces no chemical change in the substance of a plant. It simply prepares it, by breaking down its cellular tissues to undergo a chemical change by fermentation. An apple, while in a healthy condition, will remain many months in a temperature of about 60°, without suffering any apparent chemical change. But as soon as the apple has been frozen and thawed, unless the thawing take place very gradually, *and under protection from the action of the light and the atmosphere*, the cellular tissues being divided, the juices of the fruit are intimately blended together, and a fermentation immediately ensues, commencing with the saccharine, and passing, in regular order, through the vinous, acetous and putrefactive fermentations. Hence an apple or potato is always increased in sweetness, immediately after being frozen and thawed.

Potatoes suffer a similar series of changes, after freezing and thawing, though the stages of fermentation are not so apparent. The softness of a frozen and thawed potato is produced by the destruction of the cellular organization, causing the fluids to mingle together in a common mass, which were formerly contained in millions of little sacks. When potatoes lie on the ground exposed to the open air in winter, subject to alternate freezing and thawing, the temperature of the air is too cold to allow any fermentation to take place. The substance being disorganized, the moisture of the potato is exuded, and there remains enclosed within the rind of the tuber, a ball of perfect starch. In the latter part of December, some years since, I observed a flock of poultry diligently pecking at certain substances, lying upon the ground in a potato field, during a period of mild weather. On examination, I found that the potatoes which, in harvest time, had been left upon the surface of the ground, were changed into flattened balls of starch, and the fowls had discovered them. When frozen potatoes lie in a heap in the cellar, no such formation of starch ensues, because the temperature and dampness of the cellar cause the juices of the potatoes to ferment and rot.

In the same field, a few inches under the surface, were potatoes which had been frozen and thawed, without any apparent change in the firmness of their substance. The same effects may be observed with regard to apples. In the opening of spring all the apples that lie on the outer surface of the ground are rotten, while others, buried under a thin covering of grass or of soil, are fair and uninjured. What is the cause of this mysterious exemption of vegetable substances from injury, when both the freezing and the thawing take place under the soil or any other sufficient covering? It is admitted that it is the freezing, not the thawing, that ruptures the cellular tissue. Why then should this tissue be found unimpaired, after a certain gradual process of thawing? I would suggest the hypothesis, that this rupture of the cells is but a general opening at sutures or articulations, and that the tissues retain a vital power of contraction, unless this contractile power be destroyed by a too sudden or rapid ap-

plication of warmth. When the frozen vegetable is thawed by the most kindly and gradual process, the tissues, by the force of the *vis medicatrix* existing in all vital organizations, recover their healthy condition and firmness.

When the thawing takes place under the surface of the soil, these necessary conditions of the process are commonly preserved, but when it takes place in the open air, it is otherwise. Such conditions cannot exist in the open air, since in broad sunshine, even when the temperature in the shade is below zero, the sun's rays might produce on the outer surface of a frozen vegetable (I allude only to tender vegetables) a fatal degree of thawing heat. Even the indirect rays of the sun, as refracted through a cloudy atmosphere, produce so much heat that a tender frozen vegetable cannot be thawed in a sufficiently uniform temperature, unless it be entirely removed from the action of solar light.

This course of reasoning is based on the hypothesis that the simple process of freezing is not destructive of vegetable life; that a certain degree of cold suspends vitality, which revives again at a certain higher temperature. Any amount of heat, on the contrary, which is sufficient to suspend vitality, will destroy it: and it is the increased susceptibility to the action of heat, occasioned by freezing, that causes a rapid thawing process to be fatal to tender vegetation. The question that is suggested by these facts is, whether the most tender tropical plant might not be preserved during winter in a frozen state, and revived in the spring, by a very gradual and careful process of thawing? If freezing only suspends vitality in all cases, then the safety of a tender plant, after being frozen, must depend entirely on the means by which the frost is extracted.

One of the most remarkable of the supposed beneficial effects of frost, or of a very cold temperature, is the increased vitality or of irritability of hardy plants, after having been subjected to its action, for a longer or a shorter period. Dr. Darwin remarks that "the roots of potatoes, onions and other vegetables will germinate with much less heat in the spring than in the autumn; this is easily observable when these roots are stored for use, and hence malt is best made in the

spring." "The parts of animals become more sensible to heat, after having been previously exposed to cold, as our hands glow on coming into the house, after having held snow in them. This seems to happen to vegetables; for vines in grape-houses, which have been exposed to the winter's cold, will become forwarder and more vigorous than those which have been kept during winter in the house. This accounts for the rapid vegetation in the northern latitudes, after the solution of the snows."—*Bot. Garden*. Dr. Darwin also intimates that the sap of a tree will flow more readily, if it has been just previously exposed to the action of severe cold, after the flowing of the sap has commenced.

It is still questionable whether a temperature as low as the freezing point is necessary to insure the good effects attributed to hybernation; or whether it may not be the fact, that a simple state of rest is all that is required and a sufficiently low temperature to secure an uninterrupted rest by suspending all vital action. The rein-deer moss (*lichen rangiferinus*) vegetates beneath the snow, where the degree of heat is always about 40°. If a plant can be kept in a temperature permanently below 40°, or only two or three degrees above freezing point, a condition which can be secured only by protecting it both from the outer atmosphere and the light of the sun, it would probably remain in as absolute a state of rest as if it were frozen, and without any of the injury produced by frost. Such a temperature could be established by means of ice or snow in a cellar that would exclude the outside cold of the atmosphere. A cold conservatory of this description would be better for the health of tender plants than a common greenhouse, and would enable them to bear the absence of light with impunity, because the low temperature in which they are placed suspends all vital action.

Alternate freezing and thawing is injurious to the vitality of the most hardy plants, as we observe in the less healthy and vigorous growth of herbs and shrubbery in a spring that follows an open winter, during which the earth and its vegetation have been repeatedly frozen and thawed, than after a hard winter accompanied with a permanent depth of snow. The rapid vegetation that occurs on the melting of the snows

in high northern latitudes exemplifies the good effects of such a cold and even protection. It is the protection thus afforded by the snow, rather than any nitrous properties communicated by it to the soil, that produces the benefits which have been observed to follow a snowy winter. The soil is in no better condition, but the plants which have been wintered in it are more healthy and vigorous. Though grass is better after a winter of deep snow, there is no proof that any of the crops which are sowed in the spring are improved by any superior condition of the soil. Snow is supposed to furnish a greater quantity of nitre to the soil than is furnished by an equal amount of rain. This is doubtful; though it is not improbable that the snowy covering causes an accumulation of the nitrous properties of the soil, by preventing their escape into the atmosphere.

It still remains to be determined whether a vegetable acquires increased vitality from freezing, or whether it would not derive the same benefit from entire rest in a temperature sufficiently low to secure such a condition. Many tropical plants suffer a period of rest, analogous to the hybernation of northern plants. These periods of rest happen in the dry season. The cactus, for example, withers to an apparently fatal extent in the dry season; but vegetates with great rapidity when the wet season commences. For the successful cultivation of the cactus, and some other tropical plants, it is necessary to imitate this process of nature. It is remarkable that when northern vegetation happens to be subjected to a similar drying process,—obtaining thereby, in consequence of drought in the latter part of summer, a period of rest,—trees and shrubs are liable to put forth a new crop of leaves and blossoms in the autumn. These facts are opposed to the theory that frost produces any other benefit to vegetation, besides that which would arise from any healthy means, by which a perfect state of rest could be secured to them.

We cannot find anything established by nature, however, from which the vegetable as well as the animal world does not derive benefit in a great many ways. Though it may be proved that frost is not absolutely beneficial to plants during their hybernation, it is plain that a freezing temperature

only, under the ordinary circumstances of nature, could secure a perfect state of rest. Snow is one of the most important agents of nature for this purpose, by protecting plants from the heat as well as the cold of winter, the former of which is the most injurious. Hence if frost produces no benefit to vegetation by increasing the vital energy of plants, the snow is of unquestionable advantage, by affording a cold shelter, under which vegetables remain in an uninterrupted state of inaction and repose. Whether a part of the activity of northern vegetation is attributable to freezing is a problem that remains unsolved, and furnishes a subject which is worthy of scientific experiment.

I must not omit, before I conclude these remarks, to allude to the supposed influence of frost, in producing the tints of autumnal foliage. When ripe leaves are repeatedly exposed to a degree of cold sufficient to stop the circulation of the sap for a number of hours, their maturity is hastened. By certain experiments made by M. Macaire of Geneva, the autumnal tints of leaves were supposed to be the chemical effects of oxygen absorbed during the night, at a time when they are too feeble to open their pores for its escape during the day. A succession of extremely cold days and nights without frost, produces this debility of the circulating vessels of the leaves, and thereby hastens the formation of their tints: but actual frost always sears and destroys a deciduous leaf in the autumn, causing it immediately after to wither and fall to the ground.

A series of very warm days and nights—a continued summer heat, accompanied with dry weather in the autumn,—produces the same effect as a period of dry cold weather; each hastens the maturity of the foliage and causes a premature development of its tints. No sooner does the temperature of the atmosphere reach the freezing point, than the leaves become seared in proportion as they are exposed to it; and wheresoever a white frost, in the early part of the season, has alighted upon the leaves of the trees, as it often does before the tints appear, the foliage becomes seared, and never attains a good color. These effects may be observed in a greater or less degree almost every autumn, on the outer

foliage of trees, especially in damp and cold situations: but the influence of cold in bringing about a premature ripening of the foliage is made manifest by the earlier fall of the leaf and the earlier development of autumnal tints, in low damp meadows and swamps, compared with the uplands.

THE BOTANICAL AND HORTICULTURAL LITERATURE OF THE OLDEN TIMES.

BY JOHN L. RUSSELL, PROF. BOT., ETC., TO MASS. HORT. SOCIETY, &c., &c.

PART I.

THE early attempts to classify and to render useful the natural productions of any wider or narrower area of the earth, should be regarded with more than ordinary interest. We are too apt to suppose that nothing really valuable had been found out until quite modern days. We even affect to pity the ignorance, as well as the want of means for thriftiness in our ancestors, and think that what we deem quite essential now was wholly unknown then. And we do not except from this sweeping contingency any one department of human skill and labor.

My subject refers me to the actual condition of the most valuable department of industrial skill and of patient observation,—to a time when gardens and gardening were deemed worthy of distinguished patronage and favor; when scholars and poets thought the theme worthy their pen, and when the writer of an essay on the cultivation of the earth was considered a benefactor of his race.

Historically considered, agricultural pursuits are replete with interest. The first steps out of a savage life are to be traced in the attention paid to the tilling of the ground. The strictly savage man is the hunter and the fisher, depending upon the chase and upon the streams principally for his food; and next, upon such wild fruits and nutritious roots that he can find in his more pressing needs. When he endeavors to reproduce these fruits, by finding out that their seeds, put into

the earth, will in time grow into similar kinds of food ; and farther, when he increases the actual size of nutritious wild roots and bulbs by care and selection of the soil, then we shall find the savage man issuing from his roving habits, and fixing himself, for a portion of the time, to some select and favorite spot, less dependent on the prodigal bounty of nature, and discriminating in his tastes. These results produce an intermediate condition between the savage and the barbarous life, such as the early visitors to these New England shores found to be the condition of certain tribes of Indians, with whom many esculents had been long cultivated with success.

Out of this, and next in order, we shall see the second grand division of social life in barbarism, under whose most extended and possible means and patronage agriculture will the best thrive. Agriculture seems to be the veriest limit of a barbarous state ; and the interests of men will be divided into the peasant and the soldier, the master of the soil and the laborer upon it. The latter soon becomes too indolent to work, so he compels the peasant to work for him ; the former becomes too much oppressed to hope to rise into a better condition, and accordingly remains "the hewer of wood and the drawer of water,"—both essential in agricultural success in the oriental climes, where what has grown into a proverb was a literal fact, and even now the clearing of the woods and irrigation are no mean apparatus in geponics.

Thus it is evident that agriculture, in its restricted and primary meaning, has no inventive power, and deals with a few meagre observations instead. The barbarian is the true agriculturist, whether he raise Indian corn, beans and pumpkins, or protects a few bananas and arums around his hut. A barbarous and agricultural condition are perfectly coincident, and where human servitude is the severest, there the barbarous state is the most expressive. Any scientific improvement in labor will show a corresponding improvement in domestic manners and modes of enjoying life. Agricultural districts, the world over, exhibit a similar picture ; and the best modern cultivated farm is that where something more than mere stirring the earth, and planting and gather-

ing the crops, is carried on. So, when the semi-savage man is tired of his hominy, succotash and roasted pumpkin, and experiments in adding to his meal some pleasant-tasted seeds or sweet and juicy root, he, by enlarging the limits of his kitchen, and by making variety in his viands, begins to feel wants which agriculture can supply. And, when the farmer is dissatisfied with the old routine of planting and sowing, and turns his attention to labor-saving materials, he emerges from barbarous agriculture into its higher and more expanded views.

This stern and actual dependence on the vegetable kingdom for a greater portion of our food, where the chase cannot supply it, early led the human mind to look upon plants and vegetables with a considerate eye. "Give us day by day our food," is the universal expression of human want.

There are tribes of men in whose vocabulary the word bread cannot be said to be found. In pressing hunger the Orinoco savage is satisfied with balls of unctuous clay; the gaucho of the Pampas swallows ten pounds of beef; the Celtic descendants make the potato their nutriment; vermin and a few greens suffice the stomachs of the Celestials; lumps of blubber suffice the Greenlander; the negroes delight in sugar-cane and bananas; dates are enough for the African merchant on a long journey across the arid deserts; rice will do for the oriental,—but the civilized man demands the cereal grains, of the best quality of species and the most delicate of farinaceous properties, and he is the eater of bread which to him becomes the "staff of life."

The transition from the nutriment of the physical system to the curative properties to be equally found in plants, is at once easy and natural. Other substances, indeed, both animal and mineral, enter largely, at different periods, into the materia medica of early times; but in the vegetable kingdom it was, that hidden virtues were supposed chiefly to reside. Hence came the vocation of the simplers, to use an old-fashioned word; and the generic word *herbs* became, in time, to have a specific meaning, denoting certain curative virtues. The simpler sought for simple remedies in plants—some to assuage pain, a natural inference if any were good

to assuage hunger, (a most troublesome pain); some to provoke appetite, or even less worthy sensations; some to heal wounds; others to heal diseases, both external and internal; and finally, others to assuage mental disorders, as madness, anger, spleen, or the like. Hence the singularly fanciful names which some plants still bear in the nomenclature of manuals, and in lists of herbs and plants.

The agriculturist, from his distance from neighbors, is necessarily dependent on himself; and so, from necessity, learns the simpling process, and has a remedy for his ills in the herbs which grow about his home. The housewife hangs mystical bunches of dried leaves and stalks in some choice place, all bearing charmed and wondrous names, suggestive of the good they can do in all sorts of bruises, aches and sicknesses. Some nook or sunny place in the rude enclosure is, by-and-by, appropriated to their cultivation, and the garden henceforth springs into existence. Next, the eye and the smell are thought for, in the beauty or in the fragrance of the blossom, and floriculture commences. Civilization, even, is not essential to this state of things,—very rude people learn to love blossoms, and birds, and useless prettinesses.

The science of botany took its rise in these searches for medical and mystical virtues in plants; or, that such may have been the case, seems quite possible. Elaborate treatises may be noticed, were it necessary, substantiating this opinion. Such is a noble work, published in London in 1640, by JOHN PARKINSON, the king's herbarist,—a huge folio of seventeen hundred and fifty-five pages, and with numerous well executed wood cuts. Another celebrated writer of such a work is JOHN GERARDE, a famous herbalist of a still earlier date. He superintended a fine garden in London in Queen Elizabeth's day, and enjoyed this post for twenty years, and, with this and other advantages, he acquired much celebrity in his knowledge of plants. A manuscript letter of Gerarde, still extant in the British Museum, recommends to his patron, Lord Burghley, the establishment of a physic garden at Cambridge, to encourage "the facultie of simpling." In 1596, and reprinted in 1599, appeared Gerarde's catalogue of his own garden at Holborn, now a very rare work, but of such

extreme accuracy that Aiton acknowledges his indebtedness to a copy of it, in the British Museum, in preparing his "*Hortus Kewensis*," enabling him to ascertain the time when many old plants were first cultivated.

Gerarde's "*Herbal, or General History of Plants*," was published in 1597, in folio, by John Norton; the wood cuts, procured from Frankfort, had been previously used for the German Herbal of TABERNAMONTANUS, in 1588. Dr. THOMAS JOHNSON published a second edition, folio, London, 1688, with emendations and corrections, which continued to be one of the best sources of botanical information even to the beginning of the eighteenth century.

I have seen, through the kindness of a friend, a still later folio edition of a similar herbal, published in 1710 by WILLIAM SALMON, M. D., London—resembling, in style of execution and in details, the others just cited. These ponderous tomes bespeak our regard and reverence; and, while indicating the actual history of all kindred subjects pertaining to plants at the time of their publication, yet lay us under much obligation to them, in assisting our investigations of a more precise modern botanical character.

The origin and settlement of New England are affairs of such comparatively modern times, that we can scarcely claim any right of speaking of its antiquities. The lapse of two centuries and a half does nevertheless make some things to us somewhat old-fashioned, and the fleeting tenure we hold on our earlier days in its history, renders memories of it at least interesting. Induced by these considerations, I have taken some pains to examine an early New England natural history, with a view to ascertain, if possible, in regard to its list of plants, what were in the author's mind when he compiled his "*New England's Rarities Discovered: in Birds, Beasts, Fishes, Serpents and Plants of that Country, together with the Physical and Chirurgical Remedies, wherewith the Natives constantly use to cure Distempers, Wounds and Sores*," &c., &c., by JOHN JOSSELYN, Gent. The copy which I used is the second edition, there being three, viz., 1672, 1674 and 1675, small 12mos. There is a reprint of another treatise of this ingenious but credulous author, in the Collec-

tions of the Massachusetts Historical Society, 3 ser., III. vol., entitled, "An Account of two Voyages to New England, wherein you have the setting out of a ship, with the charges; the prices of all the necessaries for furnishing a Planter and his Family at his first coming; a description of the Country, Natives and Creatures; the Government of the Country as it is now possessed by the *English*, &c., &c., &c. The Second Addition, 1675." The title page of the "Rarities," as well as of the "Voyages," is prefixed by another page bearing the device of a dragon, the printer's sign; and many curious, and some exceedingly well executed original wood cuts of New England plants, add to the interest of the treatise.

We are informed, in the prefatory chapter, that our author set out from London "in the year of our Lord 1668, May 28, and arrived at Boston the 28th July following. Having refreshed himself here, after so tedious a voyage, by a considerable stay in the place, he embarked and put to sea again, arriving at "*Black Point*, otherwise called *Scarborough*, being about one hundred leagues to the eastward of Boston; here I resided eight years, and made it my business to discover all along the natural, physical and chirurgical rarities of this new-found world."

A considerable portion of the treatise under notice is occupied with a list and descriptions of the plants found in these researches and inquiries of his; and this portion may be regarded as an Herbal of New England. Much of this list is repeated in the narrative of two voyages before alluded to, elucidating some points which might be doubtful in the first. The catalogue is divided into several heads, the first of which reads thus: "*Of such plants as are common with us in England.*" Although uncertainty in identifying these plants will naturally arise, from the different application of English names as used then and as applied to species now, yet such an inquiry towards their identity may not be wholly uninteresting. Should we be able to approximate to something like a probability, the result will not be useless, and any certainty will be of value in settling questions arising about the existence, introduction or extinction of species. No doubt in many instances American cospecies were confounded

by the writer with British species more familiar to him, the nicer and discriminating eye of the practical botanist being requisite in such an exploration of a new country. Such as occur to me, or come from mature and careful inquiry, I shall accordingly point out.

(To be Continued.)

HISTORY OF FRUIT TREES AND FRUITS.—NO. I.

BY LEANDER WETHERELL.

INTRODUCTION.

HISTORY furnishes no parallel in rapidity of growth in agriculture, manufactures, commerce, national wealth and population to that of the United States. With this wonderful increase of wealth and people, have multiplied the desires for a higher intellectual culture, which develops taste, demanding something beyond the mere necessities and comforts of life. The huts of the pioneer settlers are displaced by more comfortable dwellings, which ere long give way to elegant cottages and villas. The "nice sanded floor" is superseded by the carpet; and the most common, and once deemed comfortable furniture, is exchanged for that which is more costly and pleasing to refined taste. Books and pictures are also procured.

This spirit of taste and improvement is not confined to the house and what appertains thereto, but is manifested in the cultivation of lands and lawns. The first inhabitants had few necessities, and these were met and satisfied with but a small number of the more substantial products of field culture. The desire for a better house, furniture and other means for gratifying a cultivated mind and taste, has also aroused a want for something more than the common products of farm culture. Hence the provision for a kitchen garden, followed by the desire for fruits and flowers, the luxuries of life, in addition to the comforts already alluded to. This brings man back toward his primitive state of happi-

ness; for, as we read, "the Lord took the man and put him into the garden of Eden, to dress it and to keep it." Thus it appears, that Adam was the first gardener or horticulturist, being then assisted by her who was provided and deemed a help meet for him. Hence is it that horticulture, from the earliest history of man even until now, has been considered an honorable, healthful and delightful vocation.

Of the wisest orientalist it is written, that "he made cedars for abundance as the sycamore trees that are in the vale," and wrote the history of plants and trees, even from the cedar of Libanus to the moss that covers the wall, the ancient tree-bark and castle.

The Chinese, notwithstanding their numerous barbarous habits and customs, have ever been distinguished for their attention to agriculture and horticulture. In these arts, the spirit of emulation has been encouraged and cherished by being honorably rewarded by the government.

According to Xenophon, Cyrus the Younger was in the habit of inquiring into the condition of his subjects' gardens,—rewarding the best gardeners, and punishing the negligent. Lysander, one of the monarch's horticultural superintendents, informed his king that many of the trees which he saw were planted by himself. The noble Lacedæmonian remarked, "that the world had reason to extol the happiness of Cyrus, whose virtue was as eminent as his fortune, and who, in the midst of the greatest affluence, splendor and magnificence, had yet preserved a taste so pure and so comfortable to right reason."

Socrates pronounced the following just encomium upon agriculture: "It is an employment the most ancient, suitable and worthy of man; it is the common nurse of all persons in every age and condition of life; it is the source of health, strength, plenty, riches and innumerable delights and pleasures, both sober and honest; it is the mistress and school of temperance, sobriety, justice, religion, and, in short, of all virtues, both civil and military."

To demonstrate the estimation in which the liberal patrons and promoters of this art were held, it is only necessary to read Plutarch, who records that Cores and Bacchus were

deified for having given to men immortal blessings by bestowing on them the knowledge of raising fruits. The Roman generals, consuls and dictators added distinguished laurels to their fame in war, by turning up the earth in time of peace.

Notwithstanding the valuable writings of Cato on agricultural and horticultural subjects, the senate, after the sacking of Carthage, reserved only twenty-eight volumes of the libraries of that ancient city, and these the works of Mago on husbandry, which were translated into Latin. Pompey and Vespasian bore, as monuments of triumph more valuable than brass, trees procured from the conquered nations.

In their conquest of Britain, the Romans at once set themselves about the clearing of the forests, and the introduction of the art of agriculture, introducing fruits and garden vegetables. In this way, and through the Christian missionaries, the various species and varieties of garden fruits were thoroughly introduced into England.

During the reigns of Henry VIII. and Queen Bess, many new fruits and vegetables were introduced into their realm. The latter obtained her salads from Holland, whence, according to Fuller, green peas were also procured, "dainties for ladies, by reason of coming so far and costing so dear."

In the early part of the seventeenth century, Tusser, Gerard, Bacon and others began to turn their attention to botany, agriculture and horticulture. Tusser's *Five Hundred Points in Husbandry*, and Gerard's *folio Botany*, of more than sixteen hundred pages, numerouslly illustrated with wood cuts, were then printed. Knowledge has been increasing in this department of natural history, until nearly 100,000 different species of trees and plants are known and described by botanists. The search for, and description of the different plants and trees, have greatly multiplied the variety of plants in every garden, lawn and greenhouse in and about London, Paris and our Atlantic cities and suburban towns. Every country, continent and island are laid under contribution to adorn the gardens and lawns, and furnish the greenhouses of the enterprising horticulturists of every civilized people of the globe. Thus are the grounds of the gar-

dener and farmer made to produce a great variety of both indigenous and exotic plants and trees.

The idea of establishing a society in England for the improvement of horticulture, originated with John Wedgewood, Esq. of Betley, in Staffordshire. A meeting was held at the house of Mr. Hatchard, the bookseller in Piccadilly, on the 7th of March, 1804. From this time to 1809 the society continued to increase, when, on the 17th of April, the royal charter was obtained. Since that period, the desire for knowledge, and the means for obtaining and diffusing it, have been greatly multiplied on both sides of the Atlantic.

It has been ascertained, by the aid of the Hortus Kewensis, by an English author, that since the discovery of America, "2,345 species and varieties of trees have been introduced into England from the Western Continent, and more than 1,700 from the Cape of Good Hope, besides many thousands from China, the East Indies, New Holland, various parts of Africa, Asia and Europe, until the number of plants cultivated in Great Britain exceeds 120,000 species and varieties."

Floriculture, both here and in England, has received more attention than fruit culture, notwithstanding it will be at once admitted that, in an economical point of view, the latter is greatly more valuable as a horticultural product. This consideration has induced the writer to prepare a series of brief articles for the Magazine on the history of fruit trees and fruits, compiled from the most authentic sources.

Every anecdote, reminiscence and tradition that tend to throw light on the origin, introduction, modes of cultivation and improvement of the various fruits and flowers propagated by horticulturists, are exceedingly interesting to all, and especially so to those who love to trace the history of fruits and flowers back to their origin, noting the improvements that have been made, through the lapse of ages, in variety, quality and quantity.

It is designed to treat this subject so as to blend amusement and entertainment with useful, valuable and practical knowledge. It is well, occasionally, to review the past, that we may the better feel the force of the fact that we are but a link in the genealogical chain that connects us with the

first family of the human race. It will tend to give us a feeling of obligation to our progenitors, whose improvements we so richly inherit. Such a contemplation of the past will also serve to modify that impression which, to some extent, seems to characterize the present generation, that "we are the people, and wisdom will die with us." A correct, careful and impartial examination of the history of any and every department of knowledge and improvement, will demonstrate that many things deemed modern discoveries were well known to the ancients, whom some are disposed to regard as barbarians. Job, and Solomon, and Cyrus, and Pliny, and Cato, and Columella, and Mago, and Fitzherbert, and Tusser, and Gerard, are names that every student in natural history loves to remember. The farmers and gardeners of the present day, not less than the general student of natural history, may learn wisdom from reading and studying the writings of those ancient savans, which will make them better husbandmen and horticulturists, and more liberal-minded citizens.

If the reader, in the perusal of these articles from time to time, shall enjoy but a tithe of the pleasure which the researches of old and musty tomes for the material of which they are composed have given the writer, the latter will have no occasion to regret his labor, nor the publisher to covet their space occupied in the Magazine.

THE LOGAN GRAPE.

BY A. THOMSON, DELAWARE, OHIO.

IN your November number (page 519) you notice a new grape, bearing the above name, shown by Dr. C. W. Grant at the late Exhibition of the Massachusetts Horticultural Society. You speak in terms of commendation of the fruit, and express the opinion that "its earliness and excellence entitle it to the attention of grape growers." As cultivators are always desirous to know the history of every new fruit of merit that is brought to their notice, I will endeavor to give what informa-

tion I have been able to procure in regard to the "Logan," together with the circumstances of its introduction to notice.

A few years since I was making a first visit among newly-found friends in a county in this State, some distance west of ours. It being early in September, the subject of grapes very naturally came up in the course of conversation with a gentleman who, like myself, is strongly imbued with horticultural tastes. He expressed a decided preference for the Catawba over the Isabella, which coincided with my own views; but he surprised me not a little by giving as one reason for his preference its *ripening so much earlier*. This naturally led to further inquiry, when I was still more surprised to hear that his early Catawba was a *black* grape! Without further discussion I asked to see the vine, and a single glance was sufficient to satisfy me that it was a stranger, differing in many of its characteristics from anything of the grape kind that I had ever before encountered. I was much pleased with its quality—found it was generally preferred to the Isabella by those familiar with both—and several amateur horticulturists of discrimination and taste, to whom I submitted specimens, expressed a similar preference. I procured some cuttings, which struck quite readily, and the vines they produced were distributed among friends, and from one of them the fruit was plucked that came under your observation.

Of its origin it is not in my power to give any positively reliable information—different persons giving diverse statements as to its introduction to that locality and the source whence it came. A lady friend, on whose premises a fine vine was growing, claims that hers was the first of the kind in the neighborhood, and it the product of one of a number of cuttings received from a friend in another section of the State and planted by herself. The gentleman referred to, on the other hand, claims that it was cultivated in the vicinity long before the cutting of his neighbor was planted, and from investigations he had instituted was satisfied it was a wildling from the woods in Logan county. And hence, having failed in our efforts to fix its identity, and knowing no name to which it was properly entitled, myself and a friend and ad-

mirer of the grape concluded to call it the "*Logan*," in reference to its supposed place of origin, and also as a compliment to the memory of the distinguished Mingo chief of that name. Should further investigation make it appear, (what is not improbable), that it is a variety already possessing a *name*, the new cognomen will of course yield to the claims of priority.

The vine is thoroughly hardy and of vigorous habit, the wood short-jointed and compact; the old branches being remarkably rough and ragged, and the young shoots presenting a peculiar gray appearance, which would lead one on a casual glance to suppose they were dead. It is also as distinct and marked in foliage as in wood. It is very productive, and though I have not yet fully satisfied myself from personal observation that such is the case, I think it may be safely said that it is *the earliest* hardy grape of fair quality in cultivation, and that it will certainly ripen its fruit several degrees farther north than the *Isabella* and *Catawba* can be relied upon.

Although I have seen some splendid clusters, of large size, very compact, cylindrical, and of the deepest jet black color, yet my opinion is that generally it produces branches of small size—such at least seems to be the case on vines poorly cultivated, and the pruning of which was neglected—and I have been assured that attention to these points, and especially thinning of the bunches, will insure satisfactory results as to size and appearance of cluster.

SPIRAL MODE OF TRAINING PEAR TREES.

FROM THE REVUE HORTICOLE.

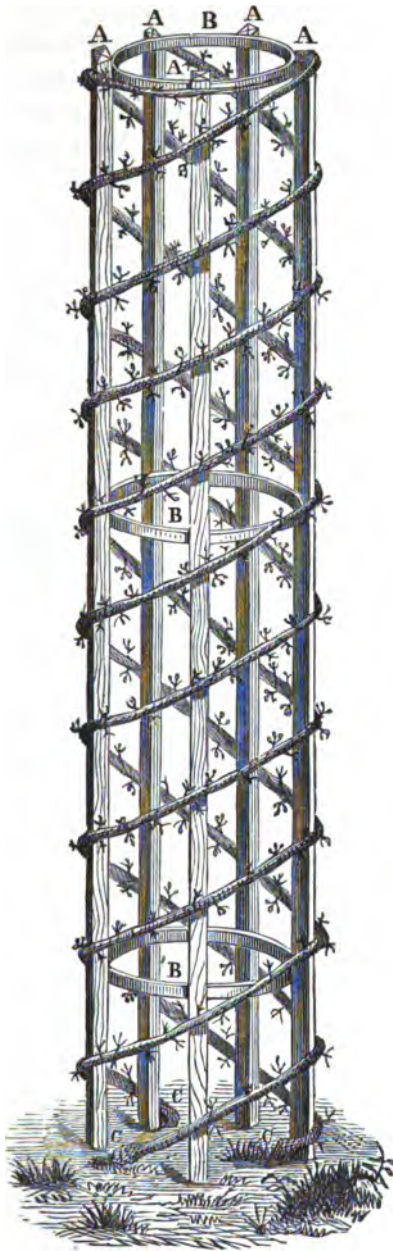
FOR most of the varied modes of training fruit trees now generally practised we are indebted to the French. The pyramidal, quenouille, goblet, and other forms of training pear and apple trees were first adopted by them, and many of the more fanciful shapes described by their experienced gardeners and authors have never yet been extensively practised by any

other nation. The quince was, we believe, first used as a stock for dwarfing the pear, and the Paradise for dwarfing the apple, by the French, and her intelligent cultivators have studied every means of reaping the greatest results from the culture of the different fruits in the smallest space, and adapted to the wants of the smallest garden.

Without occupying space, however, to refer to the various modes which might be successfully adopted by our fruit growers, we now embrace the opportunity to describe an entirely new plan of training trees, particularly the pear and apple, which has recently been brought to notice through the columns of the "*Revue Horticole*," a periodical, now edited by M. Du Breuil, one of the most skilful horticulturists of the present day. As it appears to us to be well worthy of imitation by our own cultivators we copy the engravings which accompany the description and fully explain this novel and valuable system of training, especially adapted to small gardens, where it is desirable to cultivate several of the best pears, and of those sorts which do not bear, ordinarily, only on old and established trees, and which usually occupy so much space that but a few of them could be admitted in many gardens.

The advantages which accompany the "spiral" mode of training, as it is called, will be apparent to all who are the least acquainted with the habits of the pear; as the tree is here placed under the immediate control of the cultivator, and with but a moderate amount of skill he is enabled to prune with successful results, as the check given to the sap, by the depression of the stem at an angle of twenty-five degrees, and its spiral direction, diminishes the vigor of the young wood, and tends to the formation of fruit buds; while the convenience which it offers to secure the larger pears from danger from high winds is an additional argument in its favor.

We regard this new mode of training as in the highest degree advantageous and ornamental. No greater objects of beauty could be introduced into small gardens, than these cylinders, situated at prominent points, covered with foliage and fruit.—Ed.



1. SPIRAL MODE OF TRAINING THE PEAR TREE.

We have described in another place, in 1854, under the name of "cordon-spirale," a new form of training fruit trees, and we noticed the commencement of the experiment, in June of the same year, at the establishment of one of our most distinguished horticulturists, M. Loisel, nurseryman, Ecuilly, near Lyons. Having been struck with some of the advantages that this arrangement presented, we were desirous of trying it in the beginning of the season of 1855. It was then that we noticed some grave imperfections which we hoped to modify, giving, however, full credit to M. Loisel for having first conceived the idea of the plan. The following is therefore the manner in which we designed to apply the spiral form:—

Make a cylinder of 60 centimetres (about 2 feet) in diameter, and 3 metres, (about 10 feet) or at least $2\frac{1}{2}$ metres (about 8 feet) in height, by means of stout stakes, (figs. 1 and 2, A A); these should be fixed firmly in the soil, and kept in the cylindrical form by the aid of three circular hoops (B B), or, perhaps, at less expense, light iron rods might be substituted for wood. Around this cylinder should be planted three vigorous pear trees, (C C C) one year old, setting them



2. PLAN OF THE SPIRAL FORM. equidistant from each other around the circumference; place the roots of the trees in an inclined position, so that the stems may lay at an angle of 25° . Then prune off one third of their length, and coil the remainder around the cylinder, attaching them by a flexible stick, fitted beforehand upon the upright rods, always following the same inclination that has just been indicated. Practise during the following summer the operation of cutting or pinching off the lateral branches, in order to transfer them into fruit spurs, and favor as much as possible the development of the terminal shoots.

At the time of the winter pruning tie in the terminal branches, following the same degree of inclination as previously, and leave them their entire length. Their inclina-

tion upon an angle of 25° is sufficient to cause the movement of all the buds, even to their base. Continue to apply, during summer, the necessary care to transform the lateral branches into fruit spurs, and to divert also all the action of the sap towards the extremity. These operations should be repeated every year, causing the stem to advance one spiral annually, by which means, in the space of six or seven years, the cylinder is covered with wood to the summit, which is supposed to be about ten feet high. Each stem, therefore, will be seven metres in length, (about 22 feet) and at intervals of thirty centimetres (about 1 foot) between each stem.

All the varieties of pears which ripen their fruits with certainty in the open air can be trained in this form. In the selection of trees choose those grafted upon the quince or upon the pear, as for other modes of training, according to the vigor of the trees or the greater or less fertility of the soil. Apple trees upon the Doucin stock conform to this mode of training, and even some seedlings may be trained in the spiral form with success.

The form of the "cordon-spirale" offers numerous advantages. The management and pruning of the trees are the most simple. There are not those difficulties to overcome which are encountered so often, and which consist in maintaining an equilibrium between the vegetation of all the branches. In fact, each stem produces only fruit spurs. All the products of the annual growth are utilized, while with other forms it is necessary to suppress or cut off at the winter pruning one third of the new wood in order to cause the formation of fruit buds. The fruits are perfectly exposed to the light and air, and are not liable to be shaken by high winds as with other trees. In very small gardens trees can be trained in the pyramidal form; but this occupies too much space, and only a small number of pears could be cultivated. It is therefore necessary to resort to the columnar form. But this mode presents many inconveniences in rich and fertile soils; that is, the action of the sap, restrained in shoots of an insufficient length, develops each year a great number of vigorous shoots the whole length of the tree, and prevents the formation of fruit buds.

The spiral mode presents the same advantages as the colum-

nar form, in this regard, from the small space which it occupies, since the cylinders can be placed about four feet from each other, and from the length that each stem may be allowed to acquire, even in the best soils, the sap does not act too strongly upon the development of the branches, which are soon transformed into fruit spurs. It thus appears from these various considerations that this new form could be employed everywhere with advantage, and that it will replace very profitably the columnar style in small gardens, where the latter gives too vigorous a vegetation.

STEPHANOTUS FLORIBUNDUS.

BY M. A.

THIS very beautiful and easily cultivated stove or warm greenhouse climber is universally esteemed, and fills a prominent place in every collection of plants. Its fine wavy white trusses of flowers are as indispensable as the Orange blossom for the bouquet, which hails the commencement of a new era in the lives of those who exchange ratifications at Hymen's altar. Much of its extrinsic value is derived from this cause, and it always commands a high price in the markets of Paris and London. Its intrinsic merits are so great that it ought to command the special attention of the cultivator, but it either does not, or its culture is greatly misunderstood. The latter I believe is the case, as we see plants everywhere. But a good specimen is a "*rara avis in terris.*" It is only within the last few years that we have been accustomed to see "well done" plants at the great London gatherings. Even now the eternal globe and balloon shaped trellises are the rule, (and what I above hinted, the exception,) and remind one more of a crow's nest, with its weak wiry shoots twisted and distorted in every direction, and a few puny trusses of flowers peeping out.

Having been considered very successful, I here offer an outline of the treatment practised. Suppose we take a plant, such as are usually sold by nurserymen for 75 cts. to \$1.50. About the middle of January or beginning of February, cut

it back to where the wood is of a nice russet color, *i. e.* ripe, but not hard or brown; choose a sound, clean 13-inch pot, and over the bottom place $1\frac{1}{2}$ inches of clean broken potsherds and a little moss as a subdrainage, thus forming a clear division between soil and drainage, a very important point to be observed in all plant culture. For soil choose two equal parts of good turfy peat and loam and a third of sand and leaf mould, adding a few bits of small charcoal, potsherds, or crushed bones, to keep the soil porous and healthy. Mix well together and pot firmly. If at command plunge in bottom-heat, but give no water until the season is more advanced, and the plant has made some progress; good ordinary stove treatment, such as a moist atmosphere, created by a free application of the syringe, especially of bright afternoons, with a temperature of about 70° by day, and 55 to 60 degrees by night, (as the season advances, the temperature will of course increase also, bearing in mind that heat and moisture, with partial shade from the full glare of the sun, is absolutely necessary for 19-20ths of all tropical plants,) will soon induce it to push vigorous shoots, which should be encouraged until the plant is fairly started, when all should be rubbed off but the strongest ONE, which should be tied to a neat upright stake, and led on to a horizontal wire fastened to the roof, and from 6 to 9 inches from the glass. All side shoots should be removed as they appear, and everything done to encourage a rapid growth, in *one shoot only*.

Towards autumn gradually withhold water until the plant has become dormant, when it should be taken from the roof, and cut back to where the wood is quite ripe, and coiled around a few stakes which form a temporary trellis, placing it in any situation where the thermometer does not sink below 45° , nor rise above 60° , bearing in mind to keep it as dry as possible, without shrivelling, rest being the object. About the latter part of January or beginning of February, turn it out of its pot, remove as much of the soil as possible, without injury to the plant, and prepare a similar compost as before, using the same size pot, or a larger. (I always flower it in a 15-inch.) Then form a neat proportionate barrel-shaped trellis.

I may mention for this purpose I use deal stakes, and three hoops made of $\frac{1}{4}$ inch round iron rods, the largest being for the centre; in a word, to form a neat barrel-shape, then spirally coil the plant around the trellis, 5 to 6 inches apart, until the top is reached; if any wood remains, *cut it off*. Pursue the ordinary stove treatment, and in due time it will break from the axil of each leaf; as these laterals proceed let them take the direction of the parent stem, thus assigning to each its proper place, and finally you will have a neat, well-bloomed handsome object of horticultural skill. If placed in a cool, shady situation it will much prolong the period of blooming, after which all wood should be well ripened, gradually dried off, cutting back all laterals to one or two eyes. Pursue the same course of winter treatment, repotting, &c., &c., and a like result will follow. After which its next shift will be to the rubbish heap—not forgetting, however, to bring on young plants to fill their “vacant places.”

I may here mention that I have seen a few instances where the *Stephanotus* has been well managed as a permanent climber for the stove, giving annually abundance of bloom. This may meet the eye of some who remember one that occupied the entire roof of a small span house in the nursery of the late Mr. Knight, now Mr. Veitch, of the King’s Road, Chelsea, near London; the beds being usually filled with young azaleas during its period of growth and flowering, the partial shade and moist atmosphere being mutually agreeable, wintering such plants as judgment or requirements dictated.

We present the above article to our readers with great pleasure, and trust it may only be the first of a series upon the cultivation of some of our finest plants, which are sadly treated in many collections. The *Stephanotus* is, in truth, one of the most beautiful stove or warm greenhouse plants, and the only reason it is not oftener seen is the want of a knowledge of its proper management. By following the advice of our correspondent it may be had in highest perfection; the essentials to success being, as he states, a vigorous summer growth, thorough ripening the wood, and proper rest. We hope we may see it in better condition hereafter.—Ed.

Massachusetts Horticultural Society.

Saturday, Nov. 6.—An adjourned meeting of the Society was held to-day,—the President in the chair.

The Executive Committee reported that they had appropriated the same amount as last year for premiums for 1858, with the addition of fifty dollars to the Garden Committee, which was accepted.

The following members were elected:—E. C. Cabot and J. W. Busch, Brookline; Edmund Bailey, Beverly; H. S. Mansfield, Blackstone; Anthony Apple, Cambridge; W. P. Baker and N. H. White, Quincy; I. Lombard, Jr., West Newton; E. C. Daniel, Dedham; O. Bennett, Framingham; J. P. Converse, S. A. Merrill, and J. H. Chadwick. Adjourned one month.

Dec. 5th.—An adjourned meeting of the Society was held to-day,—the President in the chair.

The Garden and Flower Committees submitted their Annual Reports, which were accepted.

The Committee for establishing Premiums were instructed to consider the expediency of holding monthly and of dispensing with the weekly exhibitions. Adjourned two weeks.

Dec. 12th.—An adjourned meeting of the Society was held to-day,—the President in the Chair.

The Report of the Vegetable Committee was accepted.

The President, Treasurer, and Chairman of the Finance Committee, were appointed a Committee to settle with Mt. Auburn Cemetery.

S. Walker, C. M. Hovey, and Capt. Austin, were appointed a Committee to nominate a Committee of Arrangements for the next Annual Exhibition. Adjourned one week.

The Reports of the Committees awarding Premiums being of considerable length, we are only enabled to give that of the Garden Committee in this number.

REPORT OF THE COMMITTEE ON GARDENS,

AWARDING PREMIUMS DURING THE YEAR.

On Tuesday, January 6th, the Committee visited the grapery of Mr. M. H. Simpson, in Saxonville. The weather was clear and cold, the thermometer standing at zero out of doors, and the change from the freezing atmosphere without to the genial warmth of the greenhouse could not fail to be agreeable, while the beauty and novelty of seeing at such an inclement season the clusters of ripe grapes hanging overhead, could scarcely fail to produce the most pleasing impressions.

The grapery of Mr. Simpson was built in 1848; the house is span-roofed, 66 feet in length, with a border inside and out; it is divided by a glass partition into two equal parts, each house containing twenty-two vines, thus enabling Mr. Simpson to bring the vines into bearing at different seasons. The vines grown were Syrian, Hamburgs, Muscats, Black Prince, Zinfandel, Frontignans and Macready's Early, and in vigor and luxuriant

growth could not well be surpassed. The theory of Mr. Simpson is too well known to need comment, and in the opinion of the Committee the experiment he has so fully tried has been crowned with the most satisfactory results and complete success.

The time required to fully ripen grapes averages from four and a half to five months; and thus, leaving a month for the full ripening of the wood, a crop might be matured once in every six months. Mr. Simpson's practice, however, is to allow the vine to grow naturally without forcing every other year, thus preventing any exhaustion which might ensue from continued forcing.

The vines now (Jan. 6th, 1857) bearing the ripe crop were started on the fifteenth day of August, 1856; the berries began to color on the twenty-fifth of November, and the first ripe fruit was cut on the third of December. The whole product from twenty-two vines was about four hundred pounds; the grapes are well colored and of the highest flavor; the bunches large and well grown, some clusters of the Syrian weighing over four pounds each. The vines in the second house at the time of the Committee's visit were just bursting into bloom, and gave every indication of health and vigor. Heat was applied on the 15th day of November, 1856; the first bud broke on the twelfth of December, and the condition of the house was in every respect satisfactory, giving promise of an abundant crop. The temperature ranges from 60° to 90° Fahrenheit; this warm atmosphere enables Mr. Simpson to bloom in great perfection some of our most beautiful hot-house plants. The Committee would particularly notice a fine specimen of the *Impatiens Hookeri*, with its delicately marked flowers; a large and beautiful plant of the pretty *Torrenia asiatica*, the curiously flowered *Æschinanthus Boschianus*; a showy plant of *Poinsettia* and a most beautiful *Cissus discolor* in full flower. The manner of growing this plant was truly charming, it being allowed to weep from a high bracket, thereby displaying to the greatest advantage its beautifully marked foliage. The moist temperature seems also particularly adapted to verbenas and heliotropes, whose luxuriant growth and profuse flowers bore witness to the skill and care bestowed upon them. Great credit is due to Mr. Simpson's gardener, Mr. Burns, whose indefatigable attention and untiring industry conduces greatly to the success of Mr. Simpson's well formed plans.

The Committee cannot but express their gratification at this visit, and trust that the time is not far distant when grapes will be as plenty in our markets, during the inclement winter months, as in the more sunny summer seasons.

Our next visit was on Wednesday, June 28th, to the estate of H. H. Hunnewell in West Needham. The situation is unsurpassed, being on the banks of Lake Wabaan, a beautiful sheet of water, which, unlike most of our New England lakes, has high bold shores, its banks being thus peculiarly fitted for residences. The estate consists of about two hundred acres, most beautifully laid out in garden, lawn, woodland and orchard. The house is approached by two avenues on either side of the lawn, each seventeen feet in width; the one bordered with white pines, silver maples and larches, the other with native deciduous trees, magnolias and *Pinus excelsa*.

Our first visit was to the small flower garden in the rear of the house, where, arranged in small beds, was a choice collection of all the best bedding plants in full bloom; showing by their growth the care and attention bestowed upon them. In the centre of this garden is a fountain, whose waters fall into a white marble basin, tastefully bordered with flowers. The view from this garden is magnificent; indeed it would be difficult to find any part of the premises where the views and scenery are not unsurpassed, or where there is not something worthy the attention of the visitor. From the garden we descended along a series of terraces all planted with choice flowers and shrubs, among which the rhododendron was conspicuous, to the borders of the lake, and wandering around, by paths winding through the woods in such a manner as to leave the beautiful natural wildness unimpaired, we obtained new views of beauty at every turn. Thence we ascended to a summer house built entirely of spruce poles in a most tasteful manner by Mr. E. P. Hollis, the superintendent of the farm; but unlike the generality of these houses finished in a manner at once neat and most attractive; the interior is furnished in a handsome rustic style, in perfect conformity with the exterior.

Here a pleasant surprise awaited us; baskets of magnificent grapes, mammoth strawberries, the famous Stanwick nectarines, peaches and figs were set before us, and resolving ourselves into a fruit committee we did ample justice to the merits of the fruit and to Mr. Hunnewell's kind and liberal hospitality. Next, passing some thriving specimens of the magnolia in front of the house, and beds of roses, verbenas, and justicia, we visited the fruit garden and greenhouses, marked by the same characteristic neatness. Here we found the choicest strawberries, each variety in its separate bed; blackberries, currants, raspberries, and pear, apple and plum trees, growing most vigorously and fruiting abundantly. Taking a hasty view of the greenhouses, from which most of the fruit had been cut, we passed on to a peach house just erected where we found the trees looking finely. In one of the graperies a peculiar manner of wiring is well worthy of note and imitation; the wire being fastened to one end of the house is drawn across to the opposite end and fastened to a large screw which is passed through the end wall; a small nut upon this screw permits the wire to be loosened or tightened according to the expansion or contraction caused by heat and cold; the neatness and simplicity of this arrangement are commendable. Stopping for a moment to notice some fine trees of the famous Stanwick nectarine, we turned towards a small building on the brow of the hill overlooking the lake, where we were shown a small steam engine of six horse power, by means of which the corn is ground, wood sawed, and water pumped from the lake into large reservoirs in the barn, whence it is distributed by pipes all over the garden, so that in a dry season the labor of watering is comparatively small. We were informed that in order to keep the place supplied with wood and water it was only found necessary to work the engine for a few hours each week; altogether this seemed the most perfect arrangement for saving labor and trouble which it had been our fortune to see. Thence we turned to view a noticeable feature of the place, far more interesting in a botanical or horticultural light; the choice ever-

greens and deciduous trees and shrubs imported by Mr. Hunnewell, and which, though as yet young, gave promise of a vigorous future.

And first we would notice the peculiar method of clipping the white pine into various shapes, a tree hitherto considered intractable; the experiment has succeeded, the shape of the trimmed trees being perfect and the foliage dense.

On the right of the avenue we noticed a fine young tree of the curious cork-barked elm; passing on we reached a path planted on each side with magnolias, kalmias, rhododendrons, and choice new evergreens, among which we would especially notice *Picea nobilis*, *pichta*, *Webbiana*, *Nordmaniana*, *Fraserii*, *pinsapo* (beautiful), *Pinus Benthamiana*, *monticolor insignis*, *ponderosa*, *Beardsleyi*, *patula*, *Lambertiana*, *Libocedrus chilensis*, *Abies Smithiana*, *Douglasi*, *Taxus elegantissimus*, *Cedrus Deodara robusta*, *Cephalotaxus druceana*, *Fortunei*, (male and female, curious and beautiful, the foliage of the two sexes being very distinct.) Next we observed a fine collection of *Magnolias*, consisting of *acuminata*, *conspicua*, *tripetala*, *glauca*, *triumphans*, *macrophylla*, *purpurea*, *obovata* and *maxima*. Mr. Harris, the attentive gardener, next pointed out to us a hybrid Scotch larch, a beautiful tree, having a silvery drooping foliage; a chance variety it seems, far superior to its parent. On the same path we noticed fine plants of the *Ledum buxifolium*, *thymifolium*, and *palustris*; also the beautiful *Andromeda* in variety; near the *Ledum* we found a small specimen of *Washingtonia gigantea*, the famous great tree of California; in foliage it resembles our juniper, and is said to have proved hardy in New Jersey, but as yet it is doubtful whether it will bear the severity of our winters.

After resting awhile in a thatched rustic summer house, commanding a fine view of the wooded points of the lake, we passed to the Italian garden, where the well shorn terraces and uniquely clipped trees could not fail to prove attractive and interesting; thence turning towards the front of the house we had our attention called to a fine Cornish elm, a weeping sophora, and an ash-leaved maple, the latter a most beautiful tree. We must not omit to mention the beauty of the specimens of *fuchsia*, standing on the long piazzas, but for details of these we must refer to the report of the Flower Committee.

In conclusion, the Committee would not have it supposed that in a condensed report they can do justice to a place like Mr. Hunnewell's. What has been written can only show what can be accomplished in a short time, by care, industry, and judicious expenditure of money. Six years ago Mr. Hunnewell's estate was a pitch pine forest, the soil barren, and the place only possessing the advantage of situation. By the judicious application of manures, and the admixture of peat from a meadow near by with the native sandy soil, it has been brought into its present fertile condition; and the Committee cannot refrain from expressing their entire satisfaction, not only with the means employed, but also at the results, both apparent and prospective.

On Wednesday, July 8th, the Committee, by invitation of Henry W. Fuller, Esq., Treasurer of the Board of Trustees, visited Woodlawn Cemetery in Malden. The ground already laid out consists of about one hun-

dred acres, pleasingly diversified by hill and dale, and offering variety in wood and meadow.

Approaching the Cemetery from Chelsea we are at once struck with the neatness which marks the roads and avenues. The entrance is through a tasteful gateway, with porter's lodge on either side, and it is shaded by trees, the original growth of the place. Turning to the right we were pleased to observe the attention paid to flowering shrubs; among which we noticed deutzias, mahonias, azaleas, wegelia, and rhododendrons in great variety; the latter seem to grow in the greatest luxuriance, and, intermingled with *Kalmia latifolia*, will soon in many places form large masses, the effect of which cannot fail to be most striking and beautiful; and the Committee cannot but express their surprise that these two of our most lovely and hardy flowering shrubs, alike beautiful in foliage and flower, should be so rarely cultivated and so little known.

The trees of Woodlawn form one of its distinguishing features; they are of every species which our woods afford, and those of foreign birth which our severe winters permit to be naturalized. Oaks of many kinds, walnuts, maples, beeches and kindred trees mingle with the choicer foreign deciduous trees and evergreens. The tupelo, one of our most beautiful forest trees, also abounds, and forms clumps of great beauty in many places.

Paths and avenues of the most solid construction have been laid out in pleasing curves, each turn affording some new prospect; and what is most worthy of comment, the construction of all the walks is such, and so perfect is the system of drainage, that even in the most violent rains they wash but little, thus materially reducing the expense and labor of keeping them in repair. From many points most lovely vistas stretch through the wood, and small ponds with fountains, here and there interspersed, give new beauty to spots already lovely and attractive by nature. Rustic arches covered with native vines, growing with wild luxuriance, span the avenues; and arbors embowered in trailing climbers peep out at convenient points. The view from the higher ground is extensive and pleasing; we see the neighboring villages, each nestling in a canopy of wood, and catch not unfrequent glimpses of the distant ocean.

The Committee cannot but feel their indebtedness to Mr. Fuller for the kindness and courtesy with which he treated them, and most fully commend the good taste which characterizes every part of the grounds. In his labors Mr. Fuller has an able and zealous assistant in Mr. Cruikshank, the superintendent, whose judicious labors have done much to beautify Woodlawn.

A visit to Woodlawn cannot fail to be satisfactory to all who love the beauty of nature, only so far fettered by art as to enable it to shine with truer loveliness; and the growing disposition in the community at large to render pleasing and attractive the resting place of the departed, while it takes little from the sadness of bereavement, cannot fail to exercise a salutary influence on the public mind. Well pleased with their visit the Committee left Woodlawn feeling how much taste may accomplish towards making even the sad things of nature shine in lovely and attractive guise.

A pleasant ride of about an hour, on the morning of July 30th, brought us to the station at Randolph, where we found carriages in waiting to convey us to the place of C. S. Holbrook, Esq., which is situated in East Randolph, about two miles from the railroad.

On reaching the house we were first attracted by the perfect neatness of the grass banks and edgings; the turf being perfectly even and of a dark healthy green, and, as we afterwards found, the same neatness characterized all the grass plats around the house. The part of Mr. Holbrook's estate under high cultivation comprises about four acres, though much more adjoining is used for mowing and pasturage; the soil is a stiff clayey loam; the land sloping off gently to the north and commanding a fine view of the village of West Randolph, about four miles distant.

The flower garden first called for the attention of the Committee; remarkable for the tasteful selection and combinations of the flowers and for the well trimmed box edgings. The symmetrical manner in which the grass edgings were cut attracted especially our notice; they seemed traced upon the ground as if by an artist's pencil, neat in shape, and remarkable for the absence of straight lines, the usual stiff, unseemly appearance being thus entirely avoided. Among the flowers, fine beds of *Vinca alba* and *rosa* deserve special notice.

In the fruit garden the dwarf apple trees appeared far better than any the Committee had seen elsewhere; many of the trees being well filled with fruit. The greenhouses are three in number; one used as a peach house, connected with which is a pit for vegetables; the two others being appropriated exclusively to grapes.

The season of peaches being almost past, we only found two trees from which the fruit had not been gathered; the growth of all the trees was vigorous and the trees healthy. The vegetable house or pit has, during the present season, been used entirely for forcing cucumbers; and though the vines were, as we were assured by the gardener, long past their prime, yet the abundant fruit still clinging to them gave evidence of a flow of sap which would have done credit to younger vines. The two other graperies are each sixty feet long by twenty wide; one of these is divided by a glass partition into two equal portions, in order to force the vines at different periods. The principal grapes grown are the Muscat in variety, Hamburgs, Frontignans, White Chasselas, and Black Prince; the size of the berries was good, and their flavor excellent; the vines were in fine condition, being free from disease, with a clear rich foliage. Much credit is due to Mr. Walsh, gardener to Mr. Holbrook, for the skill and attention everywhere exhibited, and for the neatness and artistic merit of the flower garden, and the Committee cannot but think that were the same care bestowed on flowers in general, gardening could not fail to acquire a new charm.

At five o'clock the Committee took leave of Mr. Holbrook, much pleased with their visit, and indebted for the kind hospitality afforded them during their stay.

On Tuesday and Wednesday, August 25th and 26th, the Secretary, in company with another gentleman of the Committee, made visits to the following places visited by the Committee in July.

A pleasant ride brought us to the garden of Galvin & Hogan in Somerville, where the growth of the trees and their healthy appearance gave good evidence of a rich and well cultivated soil. The flower garden was not in as fine condition as we had been led to expect, though the heavy rains of the preceding fortnight were mainly the cause of the disorder. The pears were in good bearing, especially the *Easter Beurré*, *Louise bonne de Jersey*, *Bartlett* and *Duchess d'Angouleme*; while a heavy crop of tomatoes gave evidence that in vegetables Somerville is not at all behind the neighboring towns. As a matter of course there was but little of interest in the flower houses at this season, all the plants being arranged out of doors; but an examination of the *camellias*, *ericas*, *epacris* and *azaleas*, was fully satisfactory, and afforded proof of the care which produced such abundance of promising buds and rich luxuriance of foliage.

By a walk of half an hour we reached the well known establishment of the Messrs. Hovey, so often described in the reports of the Garden Committee. The pears were in full beauty and afforded no evidence of lack of attention or careful well-directed pruning. In the greenhouse a fine collection of *achimenes* and some beautiful specimens of *Cissus discolor* were worthy of notice; we also found *Paidium calleyanum* in fruit, and were informed that from the fruit of half a dozen small trees a couple of boxes of guava jelly were manufactured last year. In the open border the Japan lilies were just bursting into bloom, and some fine new phloxes showed in full glory.

The grounds of William Whiting, Esq., on Warren Street, Roxbury, can almost claim the enviable reputation of a model place, though in extent inferior to most which have called for the attention of the Committee, comprising only about five or six acres. It is here we see what taste and care can accomplish; for in a few short years a barren rock has been converted into a fruitful and beautiful garden. The only natural ornaments of the place were a few fine oak, walnut, and beech trees, but now we view a mass of foliage, and walks tastefully laid out ever vary the scene. Of fruit there is not a great variety, nor is there an extensive flower garden; but both fruit trees and flowers are pleasingly planted in suitable situations.

The vegetable and strawberry beds were well kept and free from weeds. The paths are in fine order, and the Committee can truly say that no visit of the season has given them more pleasure than their short call at Mr. Whiting's.

A few steps bring us to the flower garden of Martin Trautman, in truth almost a wilderness of flowers; *ericas*, *camellias* and roses were in good order, though seen of course in an unfavorable season, and a few choice seedling *gloxinias* were well worthy of propagation.

The well known country seat of Jonathan French, Esq., was next on our list; and we need only say that in every respect it maintains its previous reputation; the greenhouse plants and flower garden were in fine order, and a collection of new seedling *verbenas* worthy of especial praise. We here saw some choice new *petunias*, *fuchsias*, *lantanas* and *salvias*; but to us, with the exception of the Countess of Ellesmere *petunia*, they did not ap-

pear so striking as to recommend them above others longer and better known. Two noble Seckel pear trees, loaded with fruit, were noticeable objects, as the largest and finest specimens of the kind it had been the fortune of the Committee to see.

The nursery and garden of A. Bowditch & Son next occupied our attention; the phloxes and greenhouse plants were in fine order, and the young Norway spruce indicated a situation well adapted to their growth. Mr. Bowditch kindly forwarded the Committee on their way to the greenhouses of William Wales on Columbia Street, Dorchester, and James Murray in Roxbury.

At the former a fine specimen of *Araucaria excelsa* demands especial notice; also noble plants of *Melaleuca* and *Acacia* in variety. Mr. Wales is justly celebrated for his fine specimens of *Azalea indica*, some of which were in full bloom even at the time of the Committee's visit. Large beds of ericas, and other flowers useful for bouquets, were laid out in every direction, as well as borders of the more strictly bedding plants, verbenas, salvias, gauras, ageratum, heliotropes and Nierembergias.

Mr. Murray, on our reaching his place, led us through a perfect labyrinth of greenhouses, pointing out many choice and useful plants. A large bed of tuberoseas, just shooting into bud, was a conspicuous feature. The trees and plants were in good order, though the crop of cherries had been totally destroyed by that pest of horticulturists, the robin, and, hopeless of faring better in the future, the trees were destined to be cut down, as no fruit could be obtained. And here it seems not out of place to ask why such a bird should be protected by law; a bird which annually inflicts damage to an immense amount upon the fruit-growing interests, and is of no value whatever in destroying worms, grubs, or insects; and the Committee would recommend that the Society as a Society petition the Legislature, at its next session, for the repeal of the law which protects this bird, whose destruction would be of immense benefit to every farmer or horticulturist.

In concluding the report upon these gardens, the Committee feel bound to state that much allowance must be made for any unfavorable appearance they may have presented; the season has been most unpropitious for both fruit and flowers, and the time of the Committee's visit was not calculated to show either greenhouses or flower gardens in their most attractive guise.

The Committee also visited the gardens of Parker Barnes, near Harrison Square, in Dorchester, embracing about two acres, under high cultivation. Mr. Barnes has devoted his attention more to hardy herbaceous plants and annuals than to the more tender productions of the greenhouse; and of these his collection is so varied and extensive that his gardens present an attractive appearance from the earliest spring until late in the autumn.

A small but tasteful greenhouse is at hand suitable for the production of all the varieties of bedding-out plants and the growth of a few choice exotics; several fine specimens of the *Chromatella* rose produce a profusion of bloom during the winter months; connected with the greenhouse are spacious potting, packing, and seed rooms, affording every facility for Mr.

Barnes' extensive business. But it is in the cultivation of the dahlia that Mr. Barnes particularly excels; it is his pet plant, and his care and attention has been well repaid by the beauty of the collection which every September enables him to present. Some of his own seedlings compare not unfavorably with imported varieties; and from his well known perseverance we are led to expect still further improvements.

The grounds of Evers & Co., in Brighton, comprise about three acres under high cultivation. The greenhouses are four in number, and remarkable for their neat and orderly appearance; in one we noticed fine specimens of acacia, already large trees; the exhibition of fuchsias was good, the plants displaying a profusion of bloom and vigorous growth. The flower garden was in fine order and laid out in accordance with good taste, and the Committee took leave, well pleased with their visit.

On Thursday, September 10th, a Sub-Committee visited the fruit and vegetable garden of John Gordon, in Brighton, comprising about three acres, the whole of which is devoted to the cultivation of pears, in which branch of horticulture he has been most successful. At the time of our visit the trees were in fine health and loaded with fine fruit. The whole of the ground is underdrained and well trenched. No grass is permitted to grow around or between the trees, though a crop of melons or cabbages is not unfrequently raised; the running vines of the former serving the purpose of mulching, and aiding in keeping down the weeds. The trees are planted in the proportion of two standards to one dwarf, both thriving well under Mr. Gordon's culture.

The Committee noticed as in full bearing and especially fine the Andrews, Marie Louise, Bartlett, Seckel, Napoleon, Beurré Bosc, Buffum, Bleeker's Meadow, Beurré Diel, Easter Beurré, White Doyenné, with many newer but perhaps not less worthy varieties.

Mr. Gordon makes raising pears for the market his chief business; and the Committee gained much valuable information as to the comparative market value of varieties which to the amateur possess equal merit.

Leaving Mr. Gordon's the Committee rode to the gardens of Joseph Breck, so well known to all as a veteran in horticulture, as well as an amateur in all that is choice in floriculture. From the grape houses the fruit had been mostly cut, only a few bunches of the later varieties hanging yet upon the vines, but any deficiency in the greenhouse was amply compensated for by the beauty of the flower garden. The beds are laid out with the most perfect taste, and evergreen and deciduous trees grouped here and there afford a pleasing contrast, while at the same time they serve to modify the violent winds.

Among the grass plats we noticed small beds planted with verbenas, portulacca, alyssum, ageratum and other showy flowers, which by their brilliant colors afford a most pleasing variety. Among comparatively new plants we remarked *Eschscholtzia gracilis*, *Delphinium cardinale*, *Lobelia St. Clair*, *Victoria*, *rosea* and *fulgens*. We were also shown a thrifty young specimen of the Cut-leaved birch, and many small weeping trees which promise well. But it is in phloxes that at this season Mr. Breck takes the

greatest pride, a flower to whose popularity he has added much by the dissemination of seedlings of his own production and by the importation of choice varieties. Though somewhat injured by the sun many of the varieties were in fine bloom and made a pleasing show. A seedling *Tropeolum* is also well worthy of notice, evidently a hybrid between Lilly Smith and *pulcherrimum*, and a decided improvement.

After partaking of the hospitality of Mr. Breck we proceeded to the nursery of W. C. Strong, in Newton, where we were much gratified by the neatness and order which universally prevailed. Of about ninety acres Mr. Strong has embraced over forty in a nursery, where we found every variety of hardy shrubs and trees both evergreen and deciduous. Particularly beautiful were the long lines of deciduous cypress, the light feathery foliage forming, as it were, a fringe upon a dark mantle of Norway spruce. Among more tender plants we noticed *Clerodendron Fortunii*, some new *passifloras* and a few choice acacias. Several large frames contained many thousands of the new Rebecca grape in healthy vigorous growth.

A ride of a couple of miles brought us to the estate of Josiah Stickney, Esq., in Watertown, where a ramble through his pear orchard well repaid us for our visit. The house is situated on a hill overlooking Charles River, which at this point is particularly beautiful. The land behind the house descends in gentle terraces to the river's bank, each terrace planted with choice trees.

We found the pear trees in good health, and in spite of the unfavorable season many bore good crops of fine fruit; one tree of Bartlett was particularly noticeable for the number and size of its specimens.

The lawn in front of the house is a pleasing feature, closely clipped, and shaded by noble trees. The lateness of the hour somewhat abbreviated our call in Watertown, so reluctantly we turned towards home; on our way, however, we stopped at the Public Garden in Boston, now under the care of the Messrs. Bowditch. We found all in accordance with good taste, and in perfect order, and the garden bids fair to be not only a credit to the Messrs. Bowditch but an ornament to the city, and one of which it may well be proud.

On Tuesday, September 15th, the Committee visited the garden of James Nugent, near the Jamaica Plain Railroad Station in Roxbury. Though of small extent, much was to be seen worthy of attention. In the fruit department fine specimens of the Dorchester blackberry were noticeable; the berries being larger and the plants more thrifty than any the Committee had seen elsewhere.

The greenhouses were empty, most of the plants being in the flower garden, which was in full beauty; dahlias and asters were showing a profusion of fine blooms; some fine thrifty plants of *erica caffra rubra*, presented a fine appearance; and a rose pit, filled with the choicest varieties, promises well for winter flowers.

A short ride brought us to the nurseries of the Chairman of the Committee, Hon. Samuel Walker, which we found in fine condition, and showing vigorous growth. In one lot we noticed about 15,000 pear stocks, and

5000 choice pear trees, all planted this spring, late in the season, under unfavorable circumstances, but all had been overcome by care and attention. In another nursery we saw about 5000 pear trees of the choicest varieties, many showing a growth of from six or seven feet from the bud. Around the house we noticed some fine seedling phlox, and a large specimen of the deciduous cypress. Want of time prevented the Committee from visiting six other fine nurseries. The lot of land containing 15,000 pear stocks had been underdrained; and as the Committee have not space here to speak of the advantages of this system, they hope in the future to have the pleasure of receiving a detailed account of its benefits, in a communication from the Chairman, who has thoroughly tested it.

By invitation of the Chairman of the Committee we next rode to the garden of Ariel Low, to view a fine crop of pears. The trees were mostly small, having only been planted out about four or five years, but all were in full fruit; the Belle Lucrative were the largest and finest the Committee had seen; the Louise Bonne de Jersey exhibited a very high color; the size of the Flemish Beauty was remarkable; Dunmore, Glout Morceau, Duchesse d'Angouleme, Doyenné Blanc, Beurré Diel, Beurré Superfin and Bartlett, all presented marks of characteristic excellence. And the Committee, well pleased, cannot but pronounce this the most perfect fruit garden on a small scale that they have ever visited; and although their visit was informal, would recommend a gratuity to Mr. Low for his successful culture.

The Committee would award the following prizes and gratuities:—

For the best cultivated and most neatly kept Grounds through the season, to H. H. Hunnewell, a prize of . . .	\$20 00
For the same, to William Whiting, a gratuity of . . .	10 00
For the most economically managed, best cultivated, and most neatly kept Fruit Garden, through the season, to John Gordon, a prize of . . .	20 00
For the same, to Ariel Low, a gratuity of . . .	10 00
For the most economically managed, best cultivated, and most neatly kept Flower Garden, through the season, to C. S. Holbrook, a prize of . . .	20 00
For the same, to William Wales, a gratuity of . . .	10 00
For a well managed Cemetery, in its keeping in accordance with the true principles of beauty and art, to Woodlawn Cemetery, a prize of . . .	20 00
To M. H. Simpson, for a novel and well conducted experiment in the culture of the Grape, a gratuity of . . .	20 00
To F. L. Harris, gardener to H. H. Hunnewell, for Floral Gardening, the Society's silver medal.	
To E. P. Hollis, for a well conducted Vegetable Garden, the Society's silver medal.	

For the Garden Committee,

EDWARD S. RAND, JR., *Secretary.*

Boston, Nov. 28th, 1857.

Horticultural Operations

FOR JANUARY.

FRUIT DEPARTMENT.

GRAPE VINES in the early houses will be fully ripe during this and the early part of next month, and will now need very little attention other than to keep the house dry, and at a moderate temperature, so as to preserve the grapes as long as possible. Prune away all superfluous laterals, and air freely in good weather. Vines in greenhouses will begin to break towards the close of the month; as soon as this is perceived they should be kept well syringed.

PEACH TREES in pots, now brought into the house, will ripen their fruit in June. If they need larger tubs shift them at once. **SCIONS** of fruit trees may be cut this month, and packed away in moss or earth in a cool cellar. **CUTTINGS OF HARDY GRAPES** made now and buried in the earth in a cool cellar will root more readily in the spring. **SEEDS OF STRAWBERRIES** may be now sown in pots.

FLOWER DEPARTMENT.

With the returning sun, and longer days, plants of all kinds soon give evidence of a more active vegetation, and assume a gayer aspect. By the latter part of the month many of the more prominent will be in bloom. In choice collections the cinerarias, Chinese primroses, monthly carnations, azaleas, and camellias should display an abundance of flowers. With the beginning of the year there will also be an abundance of work, many plants will need repotting, cuttings should be put in, and seeds of various kinds sown preparatory to spring. None of these operations should be neglected, or an accumulation of labor later in the season will prevent the accomplishment of much that should be done to forward the summer work. **CAMELLIAS** will now be in full bloom, and should have liberal supplies of water, and free syringing in good weather. Such as need it should be top-dressed. **AZALEAS** will begin to push their flower buds, and the plants will now require more water. **CINERARIAS** growing vigorously, and intended for fine specimens, should be repotted at once. Fumigate if the green fly appears, or they will soon spoil the plants. **PELARGONIUMS** will require additional care now; tie out the shoots carefully as they advance, keep the soil rather dry, and air freely to get a stocky habit. Repot all that require it. **CALCEOLARIAS** will need a shift into larger pots, as the plants should be kept growing as vigorously as possible, or a good head of bloom cannot be obtained. **MONTHLY CARNATIONS** will now be coming into full bloom; repot the larger and stronger plants, as they require it, and tie up the shoots to neat stakes. Cuttings may be put in for a summer stock.

ACHIMENES AND GLOXINIAS should now be shaken out of the old pots, put into fresh soil and placed in the warmest part of the house.

HOT BEDS should be set at work the last of this month, ready for use early in February.

THE EMBELLISHMENTS OF HOME.

"EVERY man's proper mansion, house and home," says Lord Bacon, "being the theatre of his hospitality, the seat of his self-fruition, the comfortablest part of his own life, the noblest of his sonne's inheritance, a kind of private principedom; nay, to the possessors thereof, an epitome of the whole world, may well deserve, by these attributes, according to the degree of the master, to be decently and delightfully adorned." Certainly no more interesting or important subject can engage the attention of every lover of rural advancement than the embellishment of our homes. To increase and heighten the enjoyments which cluster around them, and to improve every means which shall endear them more intensely to us, is an object which all will encourage, and in which none can fail to have a deep interest. The progress of every people must be in proportion to their cultivation of a refined taste, an appreciation of the beautiful, and a love for the pleasures, the pursuits and graces of the family home.

Notwithstanding the many and abundant proofs of rural improvement in this country, it cannot be denied that far too little attention is directed to the embellishment of our homes. It is something which is thought beyond the reach of a large class of our country or town residents; that it naturally belongs alone to the men of wealth and *taste*; as if taste and wealth went hand in hand, and were inseparable. No more common reply is made to every question in reference to rural adornment than that of the want of means! But this is not so. It is a very great error. That wealth may, and often does, create homes of taste, is fortunately true, but that without it they cannot be adorned is the great mistake. The palatial residence, surrounded with its parks and pleasure grounds, may be an object of our highest admiration: everything may be arranged in perfect taste; for without this it would cease to attract the attention of the many, though it might of the few. But in no less a degree is the humblest

cottage or more pretending villa an object of equal admiration, when arranged with the same regard to fitness and expression. Abundant means are not always accompanied with that sensibility to the beautiful which alone can result in the production of examples of true taste. There are but few who cannot recall some well-known scene, where the humble dwelling, overhung by some giant elm, relieved by some sturdy oak, overrun by the clustering woodbine, and surrounded with its circumscribed but verdant dooryard, ornamented with some common flower, that has made a deeper impression upon their memory than the proudest mansion standing on some "corner lot," or the most expensive villa, with its half acre of lawn and pleasure ground and garden.

But such objects of beauty are not by any means common; they are fast giving way to the less tasteful town-houses and over-ornamented cottages, neither enriched with tree or shrub, nor planted with flowers or vines, cold, unmeaning, unsatisfying, as if devoid of all the comforts and pleasures which arise from country life, and render it so attractive as to become a leading object at some period of our lives.

With the rapid increase of suburban dwellings these meet us in every direction, and especially where we should least expect them—in the country—not confined to the resident who escapes from the city to avoid its din and bustle, and breathe a freer and purer air, but among our farmers, whose utilitarian views and tasteless desires cause them to reject all adornment as toyish or unnecessary, consuming expense, valuable time, and returning no income, as if their lives were to be one ceaseless round of labor, crushing out the latent desire implanted in every man for the enjoyment of nature and the love of the beautiful in all its varying forms. Alas! it is not to be wondered that these homes present so little attraction, that the first effort of the young man should be to escape from such servitude to scenes which allure by their beauty—where cultivated taste has erected houses in accordance with his innate nature—and enter some profession in which he may attain that competency, which will enable him to gratify the yearnings of his younger days, and enjoy

— "nature in her cultivated trim,
Dressed to his taste."—

But these thoughts have already carried us beyond our limits. They have been suggested by the perusal of the excellent address of Dr. E. G. Kelley of Newburyport, before the Essex Agricultural Society, at that place, in October last. We have been so much pleased to see the subject treated in so able a manner that we embrace an early opportunity to lay an extract or two before our readers, assured that they will be gratified at our doing so. We can hardly do justice to Dr. Kelley's address in such a brief notice, as the whole is so woven together that a selection is a difficult task. After picturing the delights of home and its most cherished adornment, the wife and mother—with sound advice to our young men and women—he speaks of some of the embellishments of the farmer's house:—

“Different tastes and localities will of course so modify all decorative arrangements, that no rules would be generally or specially applicable, even were we capable of giving them. We shall only attempt therefore to throw out a few hints, aware that details are tedious to the listener. Paint upon wood is acknowledged to be economical on planed surfaces, and this should be extended even to barns and out-buildings, particularly when newly built. Planing and preparation of cheap paints by machinery, render these desirable merely for durability. Fences, particularly near the buildings, whether plain or ornamental, add so materially to the neatness and thrifty appearance of a place, when colored with some of the cheap pigments, or even whitewashed, that we wonder they are so often neglected.

“This feature of paint, when thus applied, adds much more to the market value of a place than the cost of applying. We once knew a small farm, thus brushed up at a cost of less than fifty dollars, to sell for many hundreds more than its estimated value; and the neighbors, rather than do likewise, made themselves merry at the whitewashing, as they termed it, of the retired tradesman, the purchaser.

“There is much latitude for the display of taste in the selection of colors and their adaptation to surrounding objects and scenery. The change from the general use of white, particularly in the suburbs of some cities—so severely criticised by Dickens when in this country—to separate and mixed colors,

is certainly an improvement to the landscape, if not in all instances. Any color, however, even sombre red, would be preferable on farm houses to no color at all, which we once saw recommended, for if such advice was followed we should expect to see all painted black! This would indeed be appropriate on the tops of chimneys, where the remaining part and the house itself are white—the contrast and finish then being perfect—so far as paint is concerned.

“We take this occasion to say, in this connection, that no small matter, in the construction of a house, adds more to its embellishment than an ornamental chimney. Why should such elaborate finish and enormous expense be lavished on the spire of a church, whose apparent use is only to support a vane, while the spire of the dwelling-house, which serves many important purposes, is simply a pile of bricks. As soon should one think of walking the streets without a hat, as to build a house with a plain chimney—the economy would then be consistent, though not in accordance with present custom.

“The architecture of dwelling-houses will be left to the means and disposition of the proprietor. The money expended on these will seldom be realized again by sale. But it would be cheaper to build a well proportioned house according to approved and established styles, than the plain awkward things so common; and it is certainly more appropriate and agreeable, to see a beautiful and tasteful house in the country, surrounded as it is or ought to be, with much that is pleasing and ornamental in nature, than amid the streets and wharves of a city, where each one builds higher and more elaborate from feelings of rivalry, according to his rapidly accumulated wealth, and for present gratification with fitful fashion. But not so with him of rural habits—higher, nobler and more enduring motives actuate him. A comfortable, inexpensive, permanent abode is his; where reasonable and rational enjoyments abound to himself, his family and friends.”

Of the improvement of land and the planting of trees he thus speaks:—

“The agriculturist, being an ample owner of land, has the power of excelling all others in the cultivation of trees of all kinds; fruit, forest and ornamental—the most rapid means in changing the aspect of grounds destitute of all scenic beauty,

to the most effective in the line of embellishment. He may smile at the use of the word cultivation, in connection with forest trees, but the period has arrived in their history when art must come to their aid. He has swept the primeval forests from the face of the country with a wasteful hand, not sparing even enough to propagate the species by the curious construction of their episperms, to be disseminated and grow spontaneously. Would he again have the nakedness of the land clothed with verdure, profitable in itself, and serviceable in protecting other things, he must go about it deliberately, as he would the raising of any other crop. This has long been attended to in other countries with satisfactory remuneration for a series of years, besides being highly ornamental.

“Acres on acres may be seen with us in all directions—not however on every farm—almost barren wastes, producing neither grass nor valuable trees, but crowded so thickly with obnoxious shrubbery, that the former cannot obtain a footing. These lands are not only excessively embellished through the neglect of the owner, but in the products, he does not graduate the supply to the demand—the locality is particularly unfortunate. Even his whortleberries are in such abundance as not to be very lucrative! If the oleaginous bayberries were in the vicinity of Paris, their cultivation would pay—were the juniper berries in Amsterdam, Holland gin would fall—the low juniper hugs the ground with a tenacity worthy of a better husbandman,—the lambkill finds not even a stray sheep to deprive of her young,—and the azaleas and rhodoras flourish and flower, their beauties unseen and unsung!

“Now while there is scarcely a shrub from these desolate regions that we have not transplanted to our own humble grounds and nurse as if rarities, (and we might add that when we have asked this privilege of the owners, they have looked upon us as just from Somerville, or a fit subject to go there,) a more impoverishing growth does not exist on any soil, or which the farmer would more gladly exterminate, however much the abstract admirer of accidental and neglected nature may value them for their peculiar beauties.

“Contrast this state of things with the same territory covered with a growth of timber trees, highly valuable as such, clothed

with one mass of dense foliage, absorbing nutriment from the atmosphere, which they purify—giving out moisture when most needed, beautiful at all times, brilliant beyond comparison with any other scenic feature of the landscape, when they mature and fall to the ground, themselves the pabulum for successive growths, constantly enriching the soil, unattended with the expense of other fertilizers.

“Were the wood cut off every 30 years for fuel or other purposes and its quantum of ashes returned to the surface, we doubt not the average net income, considering the labor bestowed and the increased fertility of the soil, would be greater than by any other mode of husbandry, on the same quality of land. But in addition to all these considerations of beauty and utility, and the increased market value of acre for acre,—the protection of these woods to surrounding fields,—their actual modification of local climate, which is a well established fact,—all of which are well worthy the attention of the landholder; it is their association with home, their connection with the family, which gives them their chief value.

“The boy, who in his childhood and youth roamed at will in these wild forests, sounded his shrill clarion voice to its utmost pitch, and, while he listened to its echo, felt the very pulsations of health at this distension of his chest and lungs,—charmed at every variety around him,—inspired by the sweet music of the songsters—think you not? will have such indelible impressions made on his young heart by these enchantments of home, never to be effaced by time or absence, but cherished, equalled only by the hallowed influences of the mother.”

“Where not impracticable, locally, every owner of land enough to warrant it, should devote an acre, more or less, near his dwelling, to ornamental purposes. If he will keep this in grass, and cut it several times during the summer, he will realize more from it in the aggregate than an average crop, preserve its lawn character and adapt it to the wants of his children, as a play ground, at all seasons. This reserved plat should be decorated with the most pleasing varieties of trees for their foliage, flowers, fragrance and ornamental fruits, when such can be conveniently obtained—otherwise the best the neighboring country and nurseries afford.”

We close with his happy description of the city and suburban homes:—

“Quite as happy are they who have only their city residences, which they make as gardenesque as possible. Their few feet or rods of land are filled with flowers and climbers, and perchance one tree is abreast in the street, upon which the children may look and occasionally see a stray bird. The adults have the privilege of travelling, which is done merely to gratify curiosity—to see and enjoy the homes of others—or to while away time, sojourning in quarters more limited than their own; and they return more frequently jaded by fatigue and deprivation than improved in health; the mother disappointed in match-making, and the father peevish at the loss of his ready cash. The lamented Conder thus truly exclaims:—

‘That is not home where, day by day,
One wears the busy hours away—
There is no home in halls of pride,
They are too high, and cold, and wide—
There are who strangely love to roam,
And make the trav’ler’s house their home.’

“The extensive class who are to realize practically the *beau ideal* of home are the retired merchants, mechanics and professional men; or who may be still engaged in their regular callings, whatever they may be, with their families permanently at their more or less distant homes, to which they themselves retire after their regular duties are ended for the day. Or, which is more desirable still, who have their places of business and family homes connected, where their leisure moments will be pleasantly occupied. If *they* journey, it results only in a better appreciation of their own homes,—while not the least of their enjoyments abroad are in comparing the embellishments of others with their own, to subsequently add thereto the improvements thus suggested. They are not unmindful of whatever is worthy of regard in fashionable life, but not being dependent on this ostentatious routine for their amusements, it only excites their regret that more real pleasures should not be included.”

HOME ARCHITECTURE.—No. I.

BY WILSON FLAGG.

"The grandeur of Thebes was a vulgar grandeur. More sensible is a rod of stone wall, that bounds an honest man's field, than a hundred-gated Thebes that has wandered further from the true end of life."—*Henry D. Thoreau.*

In the following papers I intend to discuss the general principles of architecture, as applied to dwelling-houses in the country. I shall treat, in the first place, of outside appearances; of houses as objects in the landscape,—both as they affect the minds of disinterested spectators, and as they reflect their own peculiarities upon the character of their occupants. My remarks will be based on the belief that the style of our dwelling-houses exerts an important influence on our feelings and conduct; that a simple style of architecture and of the grounds about one's house, is conducive to simplicity of manners, and that a "fine house" promotes a taste for fashion and an ambitious style of living. I shall endeavor to explain those qualities that constitute the true beauty of a dwelling-house, and to point out those defects in our home-architecture, which are inseparably connected with a vicious taste and luxurious habits of life.

It is frequently asserted that the Americans have no national architecture. It is true we have no ancient temples, castles and palaces, because our people from the first settlement of the country have been free: no despotism has forced from the labor of the masses any such stupendous monuments of their slavery. But we once had a simple and pleasing style of domestic architecture, deficient in many points of convenience, but homely and unpretending, and beautiful in the absence of all pretence and affectation. Some years since a general attempt was made to revolutionize this style, not so much by improving the valuable points which it possessed, as by changing our simple and homely houses into "artistic" and "beautiful" houses. Since that period a new style of home architecture has been established, and one that may be distinguished from that of all other people. It is remarkable, in particular, for being a copy of pictures laid down in mod-

ern books on villas and cottages. Our houses are advertisements of fashion, and are as far from the model of a true dwelling-house, as the belles and dandies, figured on the cards which are set up at the windows of tailors' and milliners' shops, are from the likeness of a true man or woman. They are "picturesque:"—that is, they exhibit a great variety of external parts and intricate outlines and angles. They are "artistic:"—in other words, they abound in certain superfluous appendages and decorations that suggest some classical idea or image. They are "beautiful:"—which means that there is a brilliancy and foppishness about them that immediately attracts the vulgar gaze. Our national architecture is like our national literature. 'The one is shallow and flip-pant, the other is showy and mean. It likewise resembles the habits of the people, who live for ambition and not for comfort. In fine, our houses are "follies;" and our national architecture is not Grecian, nor Gothic, nor Roman, nor Italian, nor English: it is the *gazabo* style of architecture.

When a house is designed for utility and convenience, and its outside appearance indicates or suggests its adaptedness to these ends, though it has not a single embellishment, it never fails to afford pleasure to the spectator. If you add to such a house any ornamentation, which is sufficiently removed from simplicity to divert attention from the house to its ornaments, it detracts from the pleasure with which we previously regarded it. In other words, if one of these homely and unadorned houses, that bears on its face the evidences of comfort, is made "beautiful," it loses its former attractions. The house is no longer a thing to be loved. We cease to look upon it with complacency and affection. It has become changed to something that merely pleases the eye, but awakens no delightful emotions in the soul.

A spectator is displeased with every appendage or appurtenance to a dwelling-house, that is manifestly needless, either to increase or to make apparent its advantages to the occupants. *Hence the most pleasing dwelling-houses are homely.* Homeliness in them is more attractive than beauty: or rather, it is indeed their most attractive beauty, consisting in the expression of adaptedness to the wants of a human family,

and distinguished from that vulgar beauty which is seen in an ornate dwelling-house. Let any one make a careful analysis of his own feelings and of the honest sentiments expressed by others, and he will find that this remark, which seems paradoxical at first, conveys a truth that is indirectly and perhaps unconsciously acknowledged by all. Their acknowledgment of it is evinced in the efforts commonly used to conceal glitter in the appearance of a house; in the general dislike of bright colored paints for the outside; in the example even of those who build fine houses, when they vainly endeavor to add a charm to their soulless edifice by putting up a rustic fence around their enclosures, or a rude summer-house in their garden. There is in all men a natural fondness for simplicity; and while their vanity or their ambition leads them to build an ornate dwelling-house, all the poetry and the benevolence within their souls causes them to love a homely house, with a pious yearning and affection.

There are two qualities in home architecture which are antagonistic: these are *effort* and *repose*. The latter is pleasing and excites tranquillizing and complacent emotions; the former is irritating and excites displeasure. *Effort* may be manifested in a variety of ways. A house that is narrow and high displays it, by suggesting the idea of insecurity: it does not seem to stand firmly; and though in fact very comfortable and secure, it cannot be associated with ease and security in the mind of the spectator. When we look at superfluous embellishments, we observe an effort to reach at something to gratify the vanity. In a house thus adorned we cannot perceive repose, because it suggests the idea of the restlessness of ambition. If the style and the embellishments are of a costly description, they manifest an extraordinary expense; and the idea of living in such a house is associated with the *effort* we should be obliged to use in maintaining it. Hence all such houses lack repose, and spoil the effect of any interesting landscape, of which they happen to form a conspicuous object.

It is on account of the influence of these ideas upon the mind, that a homely dwelling pleases the majority of observers more than a beautiful dwelling; homely grounds and rude

landscapes more than dressed grounds and artificial landscapes. Hence, likewise, plain manners, other circumstances being equal, please more than dignified and formal manners, and plainly dressed people more than the same persons in a rich and fashionable costume. Under all ordinary circumstances we are delighted with *repose*, and irritated by the appearance of *effort*; and these ideas enter into all our views and prejudices in relation to domestic architecture.

It is not every man who builds exactly such a house as his taste admires or his judgment approves; but rather such a house as he imagines other people will admire. In selecting the style of his house he is governed by fashion, as in selecting the style of his garments. He adorns a house as a lady adorns herself for the church or the opera. He places upon it the evidences, often the false evidences, of his own wealth, as the lady dresses herself with the evidences, true or false, of the wealth of her husband or her father. If men were not governed by their vanity, they would build plain houses, because they all secretly delight in a plain, unembarrassed style of living. They do not build such, because they hope to be admired for the contrary. As an illustration of the truth of these remarks, it is worthy of notice, that men recollect with the most pleasure those periods of their early life which were passed in simple pursuits, in plain houses, and among plain and honest people.

A short time since I met an old schoolfellow, who was with me at Phillips' Academy in Andover; and was surprised to learn that during the lapse of a quarter of a century, he had not once visited the scenes of his academical years. I thought I could trace his indifference to the circumstances in which he was placed at his boarding-house. This was built in a style superior to that of the other houses in the village; and the family with whom he boarded were addicted to a certain kind of fashionable precision and display. My own experience was of a different character. I boarded in a large old fashioned farm-house—one of those houses which truly represented republican simplicity, before this quality had died out from the habits of the people. It was divided into large, comfortable rooms, and was entirely without embellishment. The

floors were regularly sanded, in all the rooms of the house, except two which were carpeted, one a common parlor for the boarders, the other the private family parlor. A spacious yard, unenclosed, and covered with grass which was kept close by the landlord's cattle, bounded the house on two sides. Behind it was a garden, of an unpretending description, containing flowers that were not sufficiently profuse to repel observation. Not a single attempt at embellishment had spoiled the comfortable and quiet aspect of either the house or the grounds. All around were to be seen the well-tilled farm, the orchard with apple trees in interrupted rows, the pasture dotted with noble oaks, hickories and elms, the hills crowned with forest, the pleasant river winding through the meadow, perfectly charming and entirely unadorned.

The house was as simple in its construction as it could be made, consisting of two equal buildings united so as to form a right angle, and having two fronts. I have heard the fashion of it ridiculed, for the want of those appendages which would have annihilated the charm that won everybody's affection. This house, situated in the valley of the Shawsheen, about a mile distant from the Academy, was for many years a favorite boarding place for the students; and all who boarded here left school with an affection for the place, and have since felt a constant desire to revisit it and review its pleasant scenes. Had my old schoolfellow boarded in this house, or in a similar place, he would not have lived out half his days without any desire to see it again. But his school days were associated with scenes of heartless and costly dignity, among which there was nothing to be loved or remembered with delight.

Whence arises this universal predilection for simplicity, as manifested whenever we indulge in the pleasures of memory? Why do we, when reviewing our adventures, recur with the liveliest affection and interest to those scenes, those roads, those fields and those houses, which are the most entirely free from the appearance of costliness, luxury and formality? Let the wisdom of the wisest of men answer, in those maxims which abound in the ethical literature of all nations, condemning luxury and pride, and applauding humble content-

ment and simple habits of life. Men, blinded by a silly ambition, cannot realize the truth and the force of these maxims, and continue to live for ostentation and not for happiness. The miser, on the one hand, on account of his desire *to be rich*, deprives himself of the comforts and necessities of life; and the man of the world, on account of his more foolish desire *to appear rich*, lives a slave to an insupportable extravagance. Hardly an individual can be found who knows the golden mean, or who understands and pursues the true objects of happiness.

The rage for fine houses, which within twenty years past has taken possession of the minds of the community, is connected with a similar folly in every department of domestic economy, and has spoiled the rural aspect of many of our villages. How many a delightful place, which we could not look upon without imagining the spot a little nook in paradise, has been destroyed by this rage for beautifying one's abode! How many comfortable old farm houses, with their neat and rustic enclosures, their knolls of wild shrubbery that afforded a harbor for the birds, and their pleasant approaches by a foot-path under the vine-clad wall, have been modernized and improved, until one turns away, with mingled sorrow and contempt, from the sight of their beautiful ugliness! If the effects of such changes and improvements were confined to the spectator, there would be less occasion for regret. But every change of this kind is attended by similar changes in the habits of the proprietor and his family. They adopt customs within doors, that render the duties of house-keeping a greater burden and care. More servants are required in proportion as the fashionable appendages of the house are multiplied, since all supernumerary luxuries require extraordinary means for their support. No sooner has ambition expelled simplicity from the outside of one's estate, than pride and fashion enter, and take up their abode within the house.

I have often encountered, in my journeys about the country, a neat curb-roofed cottage, which seemed to me a model of that simple and humble architecture, that takes hold of one's affections and leaves an indelible impression of beauty

upon the memory. This house was perhaps sixty years old, having been built long before our people had become foolishly mad after the "beautiful;" before that sentiment which inspires one with a love of nature had been metamorphosed into a sickly taste for luxurious ornament. All intelligent persons, whose attention was directed to this house, admired it with that sort of regard with which we look upon a placid and benevolent countenance. The open green in front of it, the well near the back-door which was operated by a wheel placed over the curb, the barn standing a little in the rear of the house, near a wooded elevation that protected it from the northerly winds, and the unpretending garden with a few borders of herbs and flowers, presented to the sight an Arcadian picture which is seldom equalled.

A short time since, as I passed by this cottage, I observed that the improver had been at work there. A new and projecting roof had been placed upon it, and under the eaves and pediments, in the place of simple mouldings, was a profusion of tracery. The house was painted white, and a white ornamental fence surrounded a narrow enclosure in which it was prisoned. An old oak tree, whose rugged appearance made a somewhat disagreeable contrast with the primness of the new style of improvements, had been cut down, and instead of it there stood a row of balsams in the front yard. The barn was likewise improved by the addition of some fanciful decorations, somewhat inferior in workmanship to those which were appended to the house. This little pastoral cottage was transformed into a mere *gazabo*; and not a single object was left that formerly rendered it so interesting and attractive.

This is but one instance in a thousand of the ridiculous results of the general *mania* for ornate and artistic dwelling-houses. Men who seem to have no other kind of ambition are no less affected by it than others. But is there any more satisfaction in living in a house, after it has been dressed in such a manner as to be a gazing stock for every ignorant clown to admire? The genuine beauty of the house I have described was entirely destroyed; though its alterations and embellishments, it may be granted, are agreeable to the can-

ons of architectural and decorative art. It is not denied that artists would pronounce it an improvement upon the old house, which, they would assert, was built without any style. These gentlemen are bound by certain arbitrary rules which, though sufficiently ambiguous to give origin to continual disputes among themselves, and to frequent changes in architectural fashions, are considered a law. It remains for us who are not artists, and who have not subscribed to these canons, to deny, in part, their foundation in nature, and to be willing to admire houses which are destitute of style, on account of their want of it.

In vain will the profession object that the house I admired was devoid of taste, and without any claims to be considered an architectural building. It is replied that the whole value of a house consists in its adaptedness to the wants of a human family; and that its chief beauty is the external evidence or suggestiveness of its pleasant interior accommodations. Anything superadded to this, any ornamentation beyond that which the builders designate by the word "finish," detracts from its *repose*, and diminishes the moral beauty of the house. There are certain facings which, like the hoops of a barrel, are necessary to give it the appearance of completion. A certain amount of smoothness is needful for comfort in the interior. A less amount of the same quality on the outside, yields it a comfortable appearance, by suggesting the idea of the smoothness within. Mouldings relieve the harshness of projections. Under a roof especially they relieve the abrupt angle it would make with the walls of the house. A building cannot preserve this quality of repose, without some such facings or ornaments, if they may be so called, which are analogous to the shading in a picture. This question concerning the nature of architectural beauty will be discussed in detail in the succeeding essays.

HISTORY OF FRUIT TREES AND FRUITS.—No. II.

BY LEANDER WETHERELL.

THE APPLE TREE.

OF all the various products of the farm and the garden, nothing so tempts the appetite as ripe, luscious fruits in their season. It is well, occasionally, to consider the inquiry not unfrequently made, "Whence have we derived all these excellent varieties of the apple, the pear, the cherry, the plum, the peach, the strawberry, the gooseberry, and the currant?" To answer such, and kindred questions, it is necessary to interrogate the records of the past.

The apple tree is mentioned in the early records of both sacred and profane history. Solomon alludes to it on this wise—"As the apple tree among the trees of the wood, so is my beloved," etc. The prophet Joel mentions the apple tree as being held in high estimation among the fruit trees. It is included in the natural family of plants called *Rosaceæ*, from the rose, the type of the family, comprising most of the fruits of the temperate zone. To the genus *Pyrus*, belong the apple and the pear; to *Prunus*, the plum and the apricot; to *Amygdalus*, the peach, the nectarine and the almond; to *Mespilus*, the medlar; to *Cydonia*, the quince; to *Fragraria*, the strawberry; and to *Rubus*, the raspberry and bramble.

Botanists are agreed that all the varieties of the apple have been derived from the crab apples of the woods and hedges, and are, therefore, artificial productions, the results of skilful cultivation, being susceptible of indefinite improvement, and of a multiplication of varieties without limit. Yet, notwithstanding all this, Dr. Lindley says, "there can be no doubt that if the arts of cultivation were abandoned for only a few years, all the annual varieties of plants in our gardens would disappear and be replaced by a few original wild forms."

The crab apples, whence have originated all varieties, are common in both Asia and Europe. There are also two or three species indigenous to America,—as the *Pyrus coronaria* of the South, rarely attaining the height of twenty feet, producing large, fragrant, rose-colored blossoms, hence called

sweet-scented crab, bearing small fruit; in the Middle States, *P. angustifolia*, with smaller leaves, flowers and fruit; and *P. rivularis*, the crab of Oregon, bearing a small fruit, the size of a cherry, used by the Indians as an article of food. None of the present cultivated varieties of the apple, it is said, have been derived from American crabs, but from seeds brought hither by settlers from Europe.

The common name of this well-known fruit, *Pyrus malus*, is derived from the Greek *apios*, the Celtic *api*, and the Saxon *appel*, each signifying a fruit. The original crab is armed with small thorns, leaves serrate, fruit small and exceedingly acrid, and indigenous in most parts of Europe. It is not known whence the Europeans derived the cultivated apple,—probably, however, from the East. It was introduced into England most likely by the Romans. Twenty-nine varieties were known in Italy at the time of the Christian era. The number was greatly increased at the Norman conquest.

Pliny, writing of apples, says, “there are many apple trees in the villages near Rome that let for the yearly sum, each, of 2000 sesterces, [about \$60]; some of them yielded more profit to the owner than a small farm. This brought about the invention of grafting.”

Says Virgil—

————— “Graft the tender shoot,
Thy children’s children shall enjoy the fruit.”

Pliny further remarks, “There are apples that have ennobled the countries whence they came, and have immortalized their founders and inventors; such as took their names from Matius, Cestius, Manlius, and Claudius.” He mentions the quince apple, produced by grafting the quince on the apple stock, and called Apiana, after Appius, of the Claudian house, who first practised this grafting. “Some apples are so red,” says he, “that they resemble blood, caused by their first having been grafted upon a mulberry stock.” “The most excellent of all, both on account of its sweetness and agreeableness of flavor,” says he, “took its name from Petisius, who reared it in his time.” Pliny further adds, “I have seen near Thulix, in the country of the Tiburtines, a tree grafted and laden with all manner of fruits, one bough bearing nuts,

another berries; here hung grapes, there figs; in one part you might see pears, in another pomegranates; and, to conclude, there is no kind of apple or other fruit but there it was to be found: but this tree did not live long." Horticulturists of the present day may call this fabulous; but they should remember that Pliny was one of the most distinguished naturalists of any age of the world's history; and it should not be forgotten, that his life was not only devoted to, but his death caused by, his labors in the search after truth in the many and marvellous works of nature.

The following curious description of the apple tree is taken from Gerard's "History of Plants":—

"The apple tree hath a body or truncke Commonly of a meane bignesse, not very high, hauing long armes or branches, and the same disordered; the barke somewhat plaine, and not verie rugged: the leaues bee also broad, more long than round, and finely nicked in the edges. The floures are whitish, tending vnto a blush colour. The fruit or Apples doe differ in greatnesse, forme, Colour and taste; some couered with a red skinne, others yellow or greene, varying infinitely according to the soyle and climate; some very great, some little, and many of a middle sort; some are sweet of taste, or something soure; most be of middle taste betweene sweet and soure, the which to distinguish I thinke impossible; notwithstanding I heare of one that intendeth to write a peculiar volume of Apples, and the vse of them; yet when hee hath done what hee can doe, hee hath done nothing touching their seuerall kindes to distinguish them. This that hath been said shall suffice for our Historie."

The apple tree attains to a great age. Haller mentions some trees in Herefordshire that were one thousand years old, and good bearers. Mr. Knight considered two hundred years as the ordinary duration of a tree grafted on a crab stock, planted in a strong, tenacious soil. Speechly mentions a tree in an orchard at Burton-joyce, near Nottingham, about sixty years old, with branches extending twenty-seven feet round the bole, which produced in 1792 twenty-five bushels of apples.

Mr. Downing mentions two trees in the grounds of Mr. Hall of Raynham, Mass., about one hundred and fifty years

old. The trunk of one of these measured, one foot from the ground, thirteen feet and two inches, and the other twelve feet and two inches. The trees bore that season about forty bushels of apples. In 1780, the two bore one hundred and one bushels. In Duxbury, Plymouth County, is a tree, twelve feet and five inches in circumference, which has borne one hundred and twenty-one and a half bushels of apples in a season. There is a tree on the farm of Moses Stebbins, South Deerfield, Franklin County, about the same size, and a prolific bearer.

The celebrated traveller Von Buch remarked, that the apple and the common fruit trees grow wherever the oak thrives. In Europe the apple is cultivated to the sixtieth degree of north latitude. Good apples are produced in the Orkney and Shetland islands. The people of Lapland showed Linnæus what "they called an apple tree, which bore no fruit, said they, because a beggar woman cursed it, in consequence of having been refused some of its fruit. The botanist informed them it was an elm, a rare tree in that latitude.

It has already been stated that the apple tree is a native of Asia, or the East, as they say in Europe. The prophet Joel, enumerating the trees of Syria, says, "the vine is dried up, and the fig tree languisheth; the pomegranate tree, the palm tree, also, and the apple tree, even all the trees of the field are withered." In Madeira, the Golden Pippin trees grow on the mountain, three thousand feet above the sea, regularly producing an abundance of fruit, notwithstanding the trunks and branches are covered with white moss.

PROTECTING HARDY PLANTS IN WINTER.

BY T. MEEHAN, GERMANTOWN, PA.

IN your December number is an article on this subject, which I am sure every cultivator has read with interest. There is, however, a single sentence in it, which I think is unsound, though I am free to say it does not in any way affect the excellent recommendations you have given. The

sentence I allude to reads: "It is far better that they should be exposed, than that they should be entirely covered; for it is damp cold that is so fatal."

In expressing dissent from this, I may say that I once believed it myself; and I think it probable instances might be cited where my pen has recorded that belief. Observations made during the past hard winters lead me now to a different conclusion; and as I do not by any means consider my horticultural "education finished," I thought you would perhaps allow me space for some reasons for my new profession of faith.

It may here be remarked that frost acts injuriously on vegetation in two ways,—in the one it disrupts the tissue by the expansion of the fluids in the tender cells,—in the other it causes the evaporation of the juices, and thus destroys the plant by the same process that an excessive degree of heat would do. There is no doubt, as in every other operation of nature, a point where these two modes of destruction meet, and jointly operate against the life of the vegetable organism; but yet the distinction is important in practice.

Geraniums, heliotropes, and other plants of herbaceous structure, that are readily destroyed by the temperature declining to 32° , are instances of the first kind of destruction,—and to them "damp cold" is undoubtedly most fatal. A "white frost" will kill a heliotrope, when the thermometer indicates a temperature of only 35° ; and also destroy the hope of a whole season's crop of fruit when acting on expanding buds, that had safely defied a long and severe winter; moisture being a better conductor of heat than simple air, causes the plant to part with its heat more easily, and hence, like a foolish maiden, it pays the penalty of its misplaced affections with its broken heart.

But to those subjects whose cells have the power of resisting the expansion of the fluids, which a temperature of 32° entails, the only danger is that from excessive evaporation. If this be a fact, which I "well and truly" believe it is, damp cold will be the reverse of injurious.

That this is a fact, I think I can make evident. It is well known that a plant that will stand uninjured under a given

degree of temperature in December may be destroyed by a similar degree in March. Why? Because the sap which has been accumulating through the winter has distended and weakened the outer coverings, making that evaporation easy that was difficult before. Sir Henry Stewart, author of the *Planter's Guide*, and achiever of a success in planting which few before or since have accomplished, discovered, that a tree from a warm and sheltered wood rarely succeeded, while failure rarely attended trees taken from an open or exposed place. Why? Because the latter had a rough shaggy bark, which prevented great evaporation till the roots had time to heal; and the former had delicate thin bark, or, as Sir Henry expresses it, "was deficient in protecting properties." I have a Deodar Cedar five feet high, that three springs ago, it being then one foot, was planted in a wet hollow—so wet that in winter water stands six inches below the surface, and has not been injured in the least by the past winter. A friend near has one on a dry hill, or had, for it is barely struggling at its base for existence. Why the difference, unless my plant can afford to spare a little moisture, which my friend's cannot? And why should plants which are hardy in the shade, and which will, under such circumstances, pass the ordeal of our severest winters, lose all their foliage and become "considerably cut up" when exposed to a warm sun in winter, if not by the rapid evaporation which such an exposure must inevitably bring about?

I have seen a greenhouse in which frost had unexpectedly entered, where the plants had been so frozen that the pots and balls of earth seemed one solid piece, and in which all the plants would undoubtedly have been lost by the usual process of thawing, have all its tenants preserved to it by a copious syringing with cold water. And why? Because evaporation was then arrested. Few persons, who have not reflected well on the subject, have any idea of the large amount of evaporation that takes place from vegetable structures during the prevalence of cold "drying" winds, or severe frost. If my observations have taught me aright, a log of wood exposed to air at a temperature at zero, will dry as readily as one under 32° above freezing point; and in spite

of the many high opinions given, that a "circulation of air" is necessary to be kept in view in protecting our tender evergreens through the winter, I cannot but feel that I would prefer a good coat of snow, which, though it permitted no circulation of air, nor perhaps made much difference in the temperature bearing on the plant, yet prevented the loss of its juices by undue evaporation.

We are pleased to present to our readers the views of one so observant of the effects of frost upon vegetation, as it not only enables us to qualify somewhat the remark which forms the subject of his communication, but gives us an opportunity to express our own views more fully in relation to the matter.

In the first place, then, in the sense in which we intended our remarks to apply, we still think they need no qualification. We *were* speaking of those plants which, though quite hardy, that is, rarely suffering from any degree of cold, were still subject to injury by sudden changes of temperature, or, strictly speaking, by sudden thaws. Take, for instance, such shrubs as the Tree Pæony, Rhododendron, &c. If these can be kept thoroughly frozen through the winter no injury occurs; but from the frequent changes of temperature in an open winter they are very often much "cut up." Now, with a close compact covering of straw such plants, we think, are quite as much damaged, as they are without any protection, and why? First, because moisture, being a much more rapid conductor of cold than air, the straw which covers a plant, as well as the plant itself, is saturated with moisture by a heavy cold rain, and while in this condition the thermometer suddenly falls from 38° to zero. And this temperature is still increased under the covering, in proportion to the moisture of the air, just as a valley is colder than a hill, from the rapidly conducting power of the dampness. The plant therefore suffers not only from the greater intensity of the cold, and its longer duration, but from the distention of the sap-vessels, which are then much more susceptible of injury, as instanced by our correspondent in the case of fruit trees in spring. We will relate a case which will illustrate this.

A friend of ours who was very fond of plants, and years ago, when this occurred,—and when we had few of the fine shrubs so common now,—possessed a fine Tree Pæony, then so rare as to be of very great value. It was a large plant, and many envied the owner in his possession of such a fine specimen. Every year it threw out its dozens of huge rosy flowers, delighting and surprising all who saw it. Then the pæony was cultivated very generally as a greenhouse plant, but no greenhouse plant ever gave such blooms, or made such a magnificent display. This plant was always covered with a barrel without *either head*, but instead of one head a large board was placed over the top. We always noticed that the plant came out in spring as fresh as if there had been no winter. In our ignorance then, for it was many years ago—before we could hardly afford to buy a large Tree Pæony, and risk it in the open ground—we supposed a barrel with one head was just as good, and that the reason why our friend used his with only one head was because he had no other! We, therefore, some time afterwards, in protecting a plant, placed a barrel over it, and thought all would be right. But alas, for our ignorance! On removing the barrel in spring our pet specimen was in a sorry condition, with some of the strongest blooming buds quite dead, and others black and injured. How was all this? We reflected upon the matter, and long reflection solved the mystery. It was this. The barrel with one head, served as a good pan to catch all the water that fell upon it, and this constantly percolating through it, kept not only the air inside constantly damp, but saturated the plant; consequently from the conducting power of the moisture it was always much colder inside the barrel than outside. This damp cold at once penetrated the tender buds, and quite destroyed their delicate organism. With the barrel without any head which our friend made use of, the condition of the plant was materially reversed. The wide board covering the top carried off all water, while the crevices beneath it served to admit an abundance of air. The temperature inside was consequently not any lower if as low as outside, and the dryness of the air admitted of a free circulation, which kept the plant in a condition to resist the effects of the severest

cold. This experiment taught us a good lesson, and led us to study the effects of frost upon plants, for our future benefit, and, we hope, to the advantage of our readers. So much we can evidence against close covering, which we think will apply in most cases, though there are undoubtedly exceptions to the rule.

It will probably be considered a hopeless task to attempt to acclimatize any plants that will not resist a good frost. All protection will fail of accomplishing anything here. It is only with such plants or trees as come from cold latitudes, often near the limits of perpetual snow, where a severe frost will not disorganize their tissues, that we can ever render valuable for ornamental purposes. With these, however, and the number is large, there is hope of success, when we can by some process maintain their native temperature, or at least save them from the effects of great heat. It is to prevent injury from the latter that our efforts must be mainly directed.

Secondly, as to the effects of "excessive evaporation," we think our correspondent is somewhat in error, though apparently so well supported by evidence. We are not inclined to believe that plants whose "cells have the power of resisting the expansion of the fluids, which a temperature of 32° entails," are only in danger from excessive evaporation. The question is one of interest, and we have hardly room now to discuss it at length, but as briefly as possible must allude to some of the evidence brought in support of our correspondent's opinion.

Take the case of fruit trees which are injured by the same degree of cold in March that caused no harm in winter. Now here we have an entirely altered condition of the sap, which at this season becomes fluid, and more susceptible of cold, wholly from the conducting power of moisture; severe cold then disrupts the tissues, and, when once disorganized, evaporation does take place in an enormous degree, and undoubtedly the less hardy plants suffer in the same way after sudden thaws in mid-winter. But in all these cases the organism of the plant is first injured, and evaporation is a consequence and not a cause.

The experiment of Sir Henry Stewart supports our view of the case. His failure in removing his trees was not owing to excessive evaporation, as was proved by his success with those taken from exposed places, and why? as our correspondent asks: not certainly because the bark was rough and shaggy, but simply this. The trees from the warm sheltered wood had a large cellular organism, and the outer bark for years had not received that free action of the air and light necessary to harden and mature it; consequently, when exposed to severe cold the tissues were disorganized, and then evaporation commenced. What Sir Henry called deficient in protective properties was an error, for some of the thinnest-barked trees are the hardiest, and the shaggy ones tender, as we find in the cork-barked oaks, and elms.

The case of the Deodar cedar we do not comprehend. It is contrary to all that we have ever read or experienced with trees or plants, and especially with this and other evergreens. We had the Douglas Fir and Deodar growing in a damp locality, and after losing the tops and branches two successive years we removed them to a dry situation, and they succeeded far better. All the experiments in the celebrated Pinetum at Dropmore prove the reverse of this. It was only by thoroughly draining the soil, that any kind of success attended the efforts of planting the less hardy evergreens, which now give such celebrity to that place.

That plants should be hardy in the shade, and be "considerably cut up" when exposed, is too common a circumstance and the cause too well known to attribute it to excessive evaporation. It is because they are kept frozen the entire winter, or thawed gradually, and *in the shade*, which materially alters the case, as instanced in the experiment with greenhouse plants, where all the "tenants were preserved by copious syringing," which gradually removed the frost. So well has our correspondent, Mr. Flagg, in our last number, illustrated the effects of sudden thawing upon vegetation that we need not refer to it here. In all cases of this kind it is the sudden heat acting upon the frost, producing the chemical change of fermentation, that causes the destruction to vegetation.

We well know the danger from cold "drying" winds, especially in March, and have watched their effects. But in no instance do we recollect any injury, only when previous frosts had destroyed the organism by the rupture of the tissues.

These appear facts to *us*, though not, perhaps, apparent to our correspondent, whose reasons for his "new profession of faith" we fear are not so sound as they may appear to him. We shall be happy to know that our combined opinions have created an interest in the important question of winter protection, which will not be set at rest with this exposition of our views.

In conclusion, we may so far qualify our remark about straw coverings as to admit that when put up in a proper manner, so as to completely throw off all wet, there may be instances where the plants are safer than a full exposure. But, as a general rule, we think, in proper soils, well drained, and not too much open to cutting winds, no such protection is, upon the average, advantageous.

DESCRIPTIONS OF SELECT APPLES.

BY THE EDITOR.

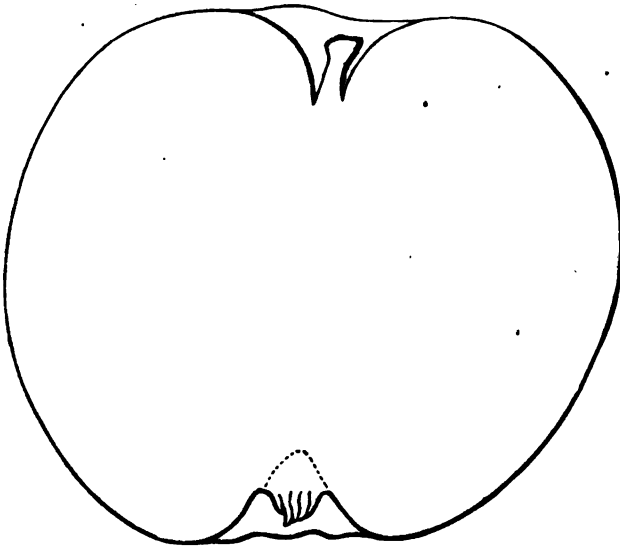
It is our desire to make known, at the earliest opportunity, all the new varieties of apples that promise to become important additions to our already extended list. We have in our past volumes described and figured quite a number, several of which have proved of the highest excellence. There are many more that deserve notice, but from the fear of multiplying names, we have deferred our descriptions until we could give some authentic account of them. The difficulty, however, of identifying some of them has been so great that we are reluctantly induced to introduce them to notice, rather than defer it to a future time, as their merits are such as to entitle them to particular attention. If by any information we may be able to obtain they should prove synonymous with known sorts, we shall lose no time in giving that information. Perhaps the best means of obtaining this knowledge is by

giving these descriptions, that they may be recognized, if already known, by those who are familiar with such undescribed varieties.

LXIV. WASHINGTON. *Magazine of Horticulture.*

Washington Strawberry.

This remarkably beautiful and excellent apple (FIG. 3) was first brought to our notice in the fall of 1849, when fine specimens were presented for exhibition at the Annual Fair of the New York State Agricultural Society at Syracuse. Its extraordinary beauty attracted the attention of all, and its



3. WASHINGTON.

good qualities, though not perhaps equal to some other varieties of the same season, bespoke a general impression in its favor. Our drawing and description were made at that time, but failing to obtain any account of its origin, &c., as it was then shown as a new seedling, we were unable only to mention it in our report. It was not until September, 1853, at the Annual Fair of the same Society in Hamilton Square, New York,

that it came under our observation again. Its beauty still was as attractive as ever, and we endeavored again to ascertain the particulars of its origin.

We have as yet been unable to do so any farther than this; that it is a seedling which grew on the farm of Mr. Job Whipple, Union Springs, Washington County, N. Y. Whether the parent is yet alive, or when it first came into bearing, we have been unable to learn. It well deserves the attention of all cultivators, and we doubt not will become a favorite apple.

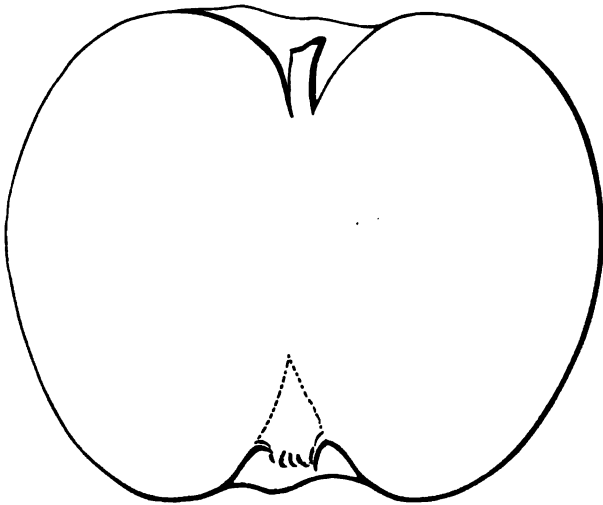
SIZE, large, about three and a half inches broad, and three inches deep: Form, roundish, slightly swollen on one side, largest in the middle, depressed somewhat at the base, and narrowing to the crown: Skin, fair, smooth, of an oily touch, with a pale yellow ground, broken with distinct stripes and splashes of brilliant red, thickest on the exposed side, and covered with prominent yellow dots: Stem, short, less than half an inch long, stout, and inserted in a small, contracted, and rather shallow cavity: Eye, rather large, closed, and considerably sunk in an abruptly depressed and somewhat furrowed basin; segments of the calyx broad, and slightly woolly: Flesh, yellowish, little coarse, crisp and tender: Juice, abundant, with a rich admixture of sweet and acid, and high flavored: Core, medium size: Seeds, medium size, long, and very pointed. Ripe in September and October.

LXV. FOSTER.

For four or five years, Mr. J. W. Foster of Dorchester has exhibited at the meetings of the Massachusetts Horticultural Society beautiful samples of apples without any name. They have repeatedly attracted the attention of the Fruit Committee, who were not only struck with their beauty, but with their excellence, and awarded to Mr. Foster a gratuity for the specimens. What the name of the apple is no one who has seen them has been able to decide. If some old variety, as it would seem it must be from the information we have from Mr. Foster, it appears now quite unknown.

It ripens in August at the same period as the Early Bough, and is nearly as large as that apple, with a beautiful pale red

and yellow skin, exceedingly fair and deliciously sweet like the former ; it is scarcely inferior in beauty to the Red Astrachan. Mr. Foster informs us that he had the scions from a neighbor, who had his tree from the nursery of Wm. Kenrick of Newton some years ago. This led us to consult Mr. Kenrick's *Orchardist*, but we do not find there any description which will answer for this apple, and, after diligent search in Downing and other authors, we have come to the conclusion that it is at least an undescribed variety. The Committee above alluded to, unable to identify it, have called it for the present, and for want of any more authentic name, the



4. FOSTER.

Foster, (FIG. 4,) deeming such a remarkably handsome, early, and excellent sweet apple, worthy the notice of all cultivators.

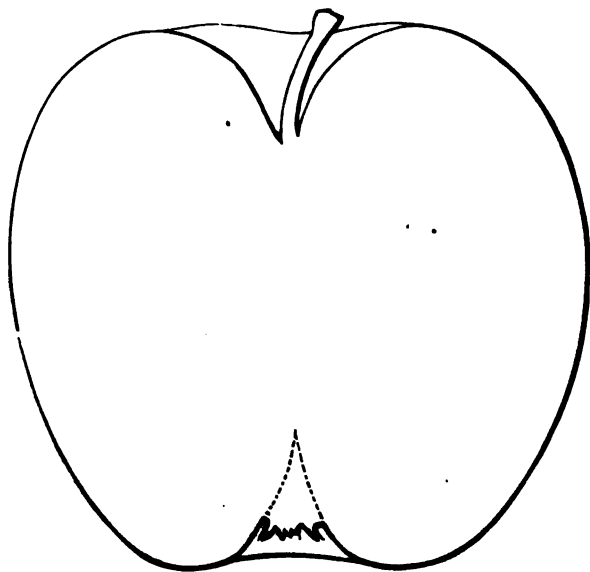
SIZE, large, about three inches broad and three and a half deep : Form, roundish, slightly ribbed in its outline, largest in the middle, narrowing little towards each end, and rather depressed at the base and the crown : Skin, very fair, smooth, pale yellow in the shade, nearly covered with pale red in indistinct stripes, and dotted with numerous greenish specks : Stem, very short, less than half an inch long, stout, and rather

deeply inserted in a small cavity: Eye, large, open, and deeply sunk in a rather large, open, broad and slightly ribbed basin; segments of the calyx broad: Flesh, yellowish white, little crisp and very tender: Juice, tolerably abundant, very sweet, rich and well flavored: Core, medium size: Seeds, small, dark. Ripe in August and September.

LXVI. WABASH.

Wabash Bellflower.

We first met with the Wabash apple (FIG. 5) in the fall of 1856, at the Annual Show of the United States Agricultural



5. WABASH.

Society in Philadelphia. Our attention was called to it by Messrs. Haberson and Brother, nurserymen, who exhibited it in their collection of a number of fine varieties, under the name of Wabash Bellflower, from its resemblance in shape, undoubtedly, to the Old Yellow Bellflower, as it is otherwise quite unlike that apple. Its beauty is one of its greatest merits, though it possesses other good qualities, which entitle it to notice. Its flesh is tender and juicy, and if it had a little

more acidity it would rank with some of our best apples. But the brilliancy of its deep orange-red skin renders it a most attractive fruit, and one well suited for the market. We were unable to learn more of its origin than that it originated in the interior of Pennsylvania, and was known in the locality where Messrs. Haberson reside, as the Wabash Bellflower. We have, however, taken the liberty to drop the latter appellation, as it only tends to confusion, there being already two or three different Bellflowers.

SIZE, large, about three inches deep and three in diameter : Form, roundish oblong, or somewhat conical, broadest near the stem, and narrowing but little to the crown, which is rather broad : Skin, fair, smooth, with a deep yellow ground, nearly covered with clear orange red, brightest on the sunny side, and streaked with russet in the cavity around the stem : Stem, short, about half an inch long, slender, curved, and deeply inserted in a rather large funnel-shaped cavity : Eye, rather large, open, and moderately sunk in a medium-sized and furrowed basin ; segments of the calyx reflexed : Flesh, white, fine, crisp and tender : Juice, tolerably abundant, subacid, and well flavored : Core, large : Seeds, medium size, pale brown. Ripe in November and December.

NEW ENGLAND SHRUBS.

BY WILSON FLAGG.

INTRODUCTION.

HARDLY less important than trees to the beauty of the landscape and the welfare of man are the indigenous shrubs of our land. Almost all our wild fruits are the product of shrubs, and the majority of fruit trees are of small stature, approaching the character of shrubbery. As ornaments of the landscape, though they afford a different kind of embellishment, they are no less to be prized than trees. While the latter yield grandeur to the near, and beauty to the distant prospect, the beauty of a near prospect is greatly dependent on its shrubbery, especially if it be rough and hilly. A rocky and

uneven surface, covered by trees alone, would not be sufficiently clothed to affect the mind with agreeable impressions, when immediately in sight. But a series of rocky cliffs and eminences, embroidered with a dense growth and a large variety of shrubs, might be very beautiful without trees. We are indebted to this class of plants for some of the most valuable flowers of the garden and pleasure ground; and when we are travelling, the shrubs that skirt the wayside, and hang their foliage, fruits and flowers over the fences and walls, add a beauty and interest to our journey, not surpassed in their effect by any other objects.

Our native shrubs are too lightly esteemed by our native population, like all other natural productions whose value cannot be estimated by arithmetical rules. Were it not for the persistent efforts of nature, who plants them with liberal hand in all neglected fields and waste places, there is reason to believe that ere this they would have been exterminated. It is true they do not yield any very important commercial profit; but it may be alleged in their favor that many of them are serviceable for their fruit; all are valuable for the shelter they afford to the birds; they protect the immediate grounds from the winds, and they will grow to perfection under the fences and stone walls, where they add the most interesting of all embellishments to the farmer.

Dr. Kelley, in his Address to the Essex Agricultural Society, published in its Transactions for 1857, unwisely ridicules (page 21) the practice of allowing bushes to grow by the sides of walls and fences. He intimates that a legitimate hedgerow would be greatly preferable. I would join with him in condemning the mangled mass of shrubbery which we observe in many of these situations, mangled by the frequent unsuccessful attempts to destroy it. The farmers should either eradicate these bushes entirely, or allow them full sway and encourage their growth, and thus rear a natural hedgerow, as far surpassing a clipped hedge in beauty, as a row of currant bushes surpasses a bed of peasticks.

This row of shrubbery would not occupy space enough to be detrimental to the interest of the farmers, who seldom cultivate one fourth part of their land. There is no need of

economizing space, by denying this privilege to the shrubbery, except in the immediate suburbs of a large town. Even there the economy of the practice is exceedingly doubtful. Setting aside the beauty of such a natural hedgerow, and the protection it affords to the grounds, it would form a perfect aviary for all the small birds, whose services are invaluable to the cultivator; and its fruits would supply their wants and lessen their depredations among the cherry trees. The insects that infest our orchards would be diverted to these shrubs, at least their attacks would be divided between them and the orchard trees, while the increased number of birds, attracted to the immediate vicinity of the orchard, would assist in ridding it of noxious insects. The roots of this shrubbery would make the foundation more firm for the support of a stone wall; and the poultry, when at liberty in the field, would take shelter under it, and work at its roots, instead of doing mischief among the crops.

Gossip of the Month.

THE AUGUSTA ROSE.—That there are a thousand and one *opinions* among horticulturists generally, on the merit and demerit of this (I say *beautiful*) rose, and no doubt the excellent judgment of many distinguished florists between Boston and Charleston are not to be overlooked, but I fear their *determined* will to make it out merely “Solfatere” has blinded their better judgment; and while walking in the garden early this morning (Oct. 27) and admiring and inhaling the odor of a rich lemon half blown bud, marked “Augusta,” dripping with the dew of the night, and reaching forth to gather to present my wife at the breakfast table, fell into a cogitation, how it was that every one *professional* slandered so beautiful a rose, while every lady who has walked my garden this summer and autumn, and to whom I always presented an opening bud, (which Solfatere seldom favors one with, being coyishly *shy*) exclaimed, “what a delightful rose!” “what a tea scent!” “have you plants for sale?” This is my experience ever since I sent it out for the owners, (in 1854) Thorp, Smith & Co., and to this day, though I had a good stock, have never been able to meet the demand, at \$1 each, and bought many from the Syracuse owners beside.

My mode of treatment is simply to bed it out in May among Malmaisons, Devoniensis, Saffranos, Bosanquet, and other favorite roses. It propagates as easy too, and, as far as my observation goes, the Augusta has always a handsome *cluster* of buds, or an opening bud, or a full blown rose, inviting

attention. That it has some similarity to the Solfatere I admit; the wood and foliage, especially the latter, is very similar; the flower buds are, however, much more globular; the clusters (for it is a Noisette) much larger; and, for scent, *incomparably* finer, rivalling *Devoniensis*, (which is no little praise.) It is about as much like Solfatere as *Devoniensis* is like Yellow Tea, odorata or Smithii—just about—and that these are similar and dissimilar, one to the other, every one knows. I have had some experience in flower culture, and, unless deceived, (which I have often been in high wrought £5.5 foreign Dahlia descriptions) never recommend a second rate flower of any sort; and, after doing so on the authority of another, reject and throw them out, no matter what the £. s. d. cost; by carefully doing which, particularly in Dahlias, I have brought my collection of these and Verbenas as near perfection as possible.—GEO. C. THORNBURN, *Newark, N. J.*, Oct. 27. [The above has been in type a long time, awaiting space for insertion. We trust, however, it has lost none of its interest by the delay.]

THE LOGAN GRAPE.—Observing in your Magazine for January your description of a grape which you call Logan, I am able to assure you that it is indigenous to the eastern counties of Indiana, where I found it, called by Germans the Wine Grape. Twenty years ago I invited one in my congregation to cultivate with me the Isabella, and he laughed at me, declaring he could go into the woods, and would do so, and furnish me a better grape, large, and ripe earlier, although not very common in Indiana. He had previously lived in Wayne County, Ia. It occurs on the Kankakee River, in St. Joseph County, Ia. The Germans occasionally make wine from it, and I can supply you with a cord of cuttings when the market demands, or the Germans can be employed to do so. Lat. 40 and 41 is its north range, where it endures a harder frost than occurs in Massachusetts.

I have discovered a new blackberry in the West, *surpassing* all others in size and sweetness—does not run over three feet upon the ground—never stands erect. I have been purposing, for twenty years, to bring this berry, and also the Wild Wine Grape of Indiana, into notice in this my native State, but have failed, through many cares, to do so. Your readers may depend on all (and more) you say in commendation of the Logan or Wild Wine Grape of Indiana.—*Yours, respectfully*, ABNER MORSE, late from Indiana. Sharon, Mass., Jan. 9, 1858.

STATE CABINET OF NATURAL HISTORY.—J. W. P. Jenks, Esq., of Middleboro', proposes to supply the State Cabinet of Natural History at Boston with one specimen of each kind of animal that has its *habitat* within the State. He will be glad to be furnished with the specimens more difficult to obtain from those who may be fortunate enough to secure them,—such as eagles, hawks, owls, wild turkeys, and all the variety of sea fowl; and of animals, such as weasels, minks, foxes, deer, hedge-hogs, seals and beavers, if the latter are still to be found in our limits. All such specimens will be skilfully mounted and labelled with the name of the donor.

Any persons furnishing specimens will remember to stuff a little cotton in the mouth, nostrils and wounds, and forward by express to Middleboro', Ms., as early after the specimen has been obtained as convenient.—(*Mid. Gaz.*)

Massachusetts Horticultural Society.

REPORT OF THE COMMITTEE ON FRUITS FOR 1857.

BY EBEN. WIGHT, CHAIRMAN.

The Committee on Fruits present to the Society a Report of their doings for the year 1857. Previous to the opening of the Hall, the last week in May, contributions were shown weekly in the library-room of the Society.

Winter apples and pears, forced grapes, peaches and strawberries, assisted to make the shows quite interesting during the late winter and early spring months, and for these contributions we were mainly indebted to Messrs. C. S. Holbrook, M. H. Simpson, J. Fisk Allen, and Henry Vandine.

Again, the season has been most unpropitious for apples, cherries and pears, in consequence of the unfavorable state of the weather during the time of the setting of the fruit.

Though the past winter was one of almost unexampled severity in horticultural annals, there was a full blossom of the above named fruits, leading us to hope for a good crop, till it became too evident that little or no fruit would set. So cold had been the winter of 1856-7 as to destroy Isabella grape vines, in many cases, vine and root, and even some of those which had stood out without any protection for twenty years. Many pear trees, such as the Bartlett, Louise Bonne de Jersey, Beurré Bosc and Marie Louise, were killed to the ground. These varieties seem to have suffered badly in almost every direction in this vicinity, while most other varieties seem to have passed the winter without the slightest injury. These facts are worthy of note.

Though the general crop of apples and pears has been less abundant than usual, such as have been grown were nearly equal to what they might have been had there have been a full crop and we had been obliged to resort to the process of thinning out. It is hardly possible to say what would have been the crop of cherries, for the few or many which were in process of ripening were secured by the robin.

Probably no city in the Union is so highly favored as is our own in the number of enthusiastic horticultural amateurs, who make the subject a pleasure, looking after, closely watching and encouraging the growth of fruit trees, planted by their own hands, during the leisure of business.

The Committee feel that they would fail in duty did they omit to mention one of the most perfect fruit gardens comprised in this vicinity, viz., that of Mr. Ariel Low's, Roxbury, the whole grounds consisting of about one acre. At the commencement Mr. Low selected pear trees which were in bearing and planted them in soil deeply trenched, and mixed with soil fresh from the woods, and in this he showed his clear-sightedness at the very outset. Notwithstanding his trees have been planted out only some four or five years, they were loaded with the very choicest specimens of pears, which had been judiciously thinned so as to leave them handsomely dis-

tributed over the whole tree. It would have been a difficult task to have found an inferior specimen after going the rounds of the whole garden. On referring to the list of awards of premiums made at the Annual Exhibition, it will be noticed that Mr. Low was enabled to carry off one of the premiums for the "best ten varieties." It is an encouragement to beginners, to know that so much can be done on so small a piece of ground, and in so short a time. Any one designing to lay out a small fruit garden, would do well to make a visit to the garden of Mr. Low and take a lesson from one who is deservedly entitled to the thanks of his horticultural brethren for the accomplishment of so much in the brief time allotted.

A Sub-Committee also visited the fruit garden of Mr. John Gordon, Brighton, which comprises some three or four acres, the most part of which has been deeply trenched and underdrained. The grounds are entirely covered with pear trees, thickly planted, about two thirds of which are on the quince—and so thickly planted that he does not grow vegetables (as a general thing) among his trees. Mr. Gordon confines himself to only a few varieties, since he grows for market, and by experience has learned what varieties will and what will not pay a handsome return. He says he finds a ready sale for those having a reddish or a russety skin, while those with a green skin could not be disposed of. All his fruit is carefully gathered by hand, and some four days before designing to market it he takes his fruit boxes, which are about twenty inches square and six or eight inches deep, and places some woollen substance over the inside bottom; he then places a layer of pears and then another layer of woollen, and another layer of pears, covering the whole with woollen. In no case does he pack more than two layers of fruit.

The fruit is then allowed to go through a *sweating process*, which serves to give it a rich coloring, and it is then sufficiently ripened for market. We asked him if cotton batting would not answer the same purpose? He said cotton would not ripen them so fast; that some woollen substance was better, as being more expeditious, and that it left a finer blush on the skin.

Mr. Gordon is noted for his fine specimens of pears, which command the highest price. He instanced a fact in regard to his Bartlett's, that, "while his were yielding him ten dollars per bushel, other wagons, by the side of his, had pears of the same variety, equally as large, but in consequence of retaining a green skin were offered at three dollars per bushel."

And we would here say, that to the perfect completion of a good fruit garden, it must be thoroughly *underdrained*. If possible, let it be done before setting out the trees, though it could be done at some future day, with some slight root pruning; which might not prove injurious if carefully managed, only let it be remembered that *it must be done*.

APPLES, in quantity, have been an entire failure; yet dishes of fine specimens have been shown during the season, (with the exception of winter varieties,) which would favorably compare with former years. This, we believe, is the first year since the formation of the Society, when there has not been a competition for the premiums offered for winter apples. This year there was not a single dish presented on the third Saturday in

December, (the day assigned,) plainly showing that superior specimens were not to be had.

Amongst the seedlings handed in, we would mention in terms of commendation *for the table*, a red apple, under medium size, shown by Austin J. Roberts, Middleborough, Mass. In a note to the Committee Mr R. says, "these apples are of uniform size, great productiveness, and possess the property of long keeping." The Committee can bear witness to its handsome appearance and good flavor. The apple originated in Pike County, Illinois.

A single dish of the Melon (Norton's Melon) was exhibited. This apple originated in the State of New York, is slow of growth while young, but proves prolific, is a handsome apple, of delicious flavor, and is in eating from November to February. Red apples, on a yellow or russety ground, command a good price for the table, when it would be difficult to dispose of such as have a green skin. For this reason, the Gravenstein, Hubbardston, Fameuse, Polish, Mother, and Baldwin are sold readily for dressing off tables. Sweet apples, during winter, also command a good price, and well repay for culture.

APRICOTS have proved an entire failure, so much so, that there has not been made a single award under this head, and we are inclined to the opinion that the culture of this fruit, together with the plum, will have to be abandoned, on account of injury from the curculio.

BLACKBERRIES have been brought in abundantly during their season, and for a much longer time than usual. Mr. James Nugent continued to show them, for the reason that the first shown were grown on a southern exposure, while those exhibited at a later day were grown under a northern exposure. The variety shown by Mr. Nugent was the Dorchester, and it will be noted that every premium was carried off by the Dorchester, though the Lawton was shown in abundance. And it is worthy of mention, that in each and every instance where the Committee questioned the contributors for the purpose of learning their individual opinion as to the merits of the one or the other variety for market, there was not a single dissenting voice as to the superiority of the Dorchester over the Lawton—in fact, nearly all said they should abandon the cultivation of the Lawton as not repaying them sufficiently well while they could have the Dorchester.

Though some of the Committee believe both possess merit, a large minority do not deem the Lawton even worth cultivating, except for a small garden, where they can be picked and such as are ripe selected for the table: if picked previous to maturity it is not even palatable. While the Dorchester is not lacking in any one requisite which the Lawton possesses, it is superior in many respects to the latter. The Dorchester is of superior flavor; the berry is much larger; is equally as hardy, and fully as prolific, and when ripened bears carriage, and therein is decidedly superior to the Lawton. The former retains its black lustral quality, while the latter, immediately after picking, changes to a reddish bronze, and to most tastes its sour or acidulous flavor is not agreeable, and it would require an additional amount of sugar to make it palatable. The Committee have

carefully tested them during the last two years, and our opinion is unanimous in favor of the Dorchester. The Dorchester is a seedling; so, also, is the Lawton, (though it is a mooted question,) and *not* the common blackberry which springs up by the wayside, and is sometimes transplanted for garden culture in the vain hope of its proving equal with the two above named.

We would again remind cultivators that to insure a prolific crop it is absolutely necessary to train the stalks horizontally in order that shoots may break at every eye, while, if allowed to grow upright, they only break at the top. Mr. Merriam, who has had most eminent success in fruiting it, says he does not obtain a full crop till the third year of planting.

CHERRIES.—Several seedlings have been tested by the Committee, but none have proved of superior merit. It will be seen that the awards were given to old established varieties, viz., Black Eagle, Black Tartarian, and Napoleon Bigarreau. Messrs. Hovey contributed their Seedling, called "Hovey," July 18th, and the specimens were of marked superiority; probably from the fact that the tree is more fully matured; the quantity shown was not sufficient, however, to compete for premium, and even these few were saved from the birds under the protection of netting.

Only a few of the many seedlings raised by Dr. J. P. Kirtland, Cleveland, Ohio, have been fruited in this section, but such as have been give promise of productiveness and quality over many of the older varieties of foreign origin. Those of a dark color are Black Hawk, Osceola, Brant, Logan and Pontiac. Those with a red skin are Gov. Wood, (one of the very best) Kirtland's Mary, Cleveland, Hoadley, Favorite, and Kinnicott.

CURRENTS.—The White and Red Dutch were the best grown, and the Victoria was nearly equal. W. C. Strong made a liberal display of new varieties, though not in sufficient quantity to compete for premium; a few of the new varieties were the Circassian, Red Grape, Versailles, and Macrocampa.

FIGS.—There were several contributors of this fruit, though the largest and best display at any one time was made by General Newhall. These were ripened off in the open air.

GOOSEBERRIES.—There does not seem to have been much headway made in the culture of gooseberries since the introduction of Houghton's seedlings, some twenty years since; and we are surprised that no good seedlings have been brought to notice till within the last year or two. We now have the promise of a superior seedling, raised from the Houghton, which, like the original, is not subject to mildew. It was produced by Mr. Charles Downing, another by the Shakers at Lebanon, N. Y., and still another by Mr. Smith of Vermont. All three give good promise as to quality, fruitfulness and freedom from mildew.

This is really one of the most valuable fruits of its season in England, where it is raised in the perfection of nearly an ounce to the berry.

GRAPES—grown under glass—have been raised in such abundance the past year that our tables have been graced with them, from week to week, for nearly the whole year. Mr. Simpson has been eminently successful in his novel mode of culture. From vines started in August, he cut grapes

in December, and in January and February made liberal contributions for the Society's tables.

The Committee is much indebted, from year to year, to J. Fisk Allen, Salem, for valuable information on this subject. He has made the culture of grapes a special object, and his discriminating eye and close observation will always prove valuable. We would call the attention of the Society to his remarks relative to the identity of the Barbarossa, believing Mr. A. has given the subject the closest scrutiny. Acknowledging our obligations to Mr. A., we herewith incorporate into our report his communication, received a few days since :

EBEN. WIGHT, Chairman Fruit Committee Mass. Hort. Society :

Dear Sir,—In reply to your queries I would say, that the noticeable fact in grape culture in our vicinity the past season of 1857, has been the great increase of mildew, and the crop of fruit has been greatly diminished thereby. The wild grape, as well as the Isabella and Diana, have been attacked—the Clinton, in my garden, being the only variety that has not been affected. The Diana escaped with only slight injury, but the fruit suffered somewhat from the rot, a rare occurrence with any variety in our section. Notwithstanding an unusual amount of rain and cloudy weather, the mildness of the autumn enabled the Isabella and Diana vines to ripen crops of fine grapes, when sulphur had been used in quantity sufficient to check the mildew. A vine on the south of my dwelling yielded one hundred pounds of as rich, sweet fruit as ever the South produced ; and this vine, for thirteen years, has never failed to mature a full crop.

Several of my hybrid vines withstood the cold of the last winter, with the mercury twenty degrees below zero. Being injured by mildew, and also growing in a cold, wet soil, the fruit did not sweeten sufficiently ; on a wall, in a warm, dry situation, they would mature with the Isabella, and I think would be preferred, as less pulpy and foxy. The berry is oval and black, as large or larger than the Isabella, the form and size of the bunch like this variety.

Another vine, that fruited for the first time this year, was the worst thing imaginable,—small, foxy and sour.

No. 19 fruited for the fourth time. The quality was good, but it did not set its fruit well. This was a general trouble with many wild grapes this year,—the cause, apparently, being some defect in the blossom. The flower is perfect, but the stamen is short, and the anther bursts and spreads its pollen under the pistil, and not over it, as it should do. It must be considered a defect.

No. 8—a black, late hybrid that I have thought well of, and that previously had withstood twelve degrees below zero of frost—was killed to the ground. This can only be suitable for the South.

In my garden, the Early Amber ripened well and early. The fruit is good, but the vine drops the grapes so badly as to destroy its value for the table. The Sage was ripe early in September. It is the best of the large wild fox grapes, and requires a dry, warm soil.

The Union Village and the Rebecca both mildewed more than the Diana. The Delaware, in our vicinity, did mildew some, but slightly.

It appears that the prospect for success in the field or vineyard culture of the grape in Massachusetts is not very flattering. On walls fronting from south-southeast, round on the southern side to west-northwest, they will do well; an eastern exposure is subject to mildew.

With the cultivation under glass, the season has been rather unfavorable. A cold and cloudy winter and spring retarded the ripening of the early crops, and delayed the maturity of the later ones several weeks. Here, again, the mildew made sad ravages, and sulphur had to be used for the first time in my experience in a winter forcing house.

The extreme cold of the winter killed to the ground many Hamburg vines. In one of my houses, (a span-roofed,) six or eight Black Hamburg vines were killed root and branch, and this also is the first experience of the kind in twenty-three years' cultivation. The Muscat of Alexandria and the Queen of Nice were also killed to the roots. The Syrian was badly injured. The vines uninjured were the Royal Red Chasselas, Bar Sur Aube, Rose Chasselas, Chasselas Masqué and the White Frontignan. As the Chasselas with the Isabella produced the White Hybrid, it is satisfactory to know that this is more hardy than many kinds. The Black Hamburg and the Black Prince were also used in hybridizing, and the produce of the former is apparent in No. 19; of the Black Prince, in one named the Marion.

Fire heat had been kept in this house during the months of October, November, and a part of December. After the vines were pruned and laid down, they were covered with matting, and shutters put to the side lights, and the fires allowed to go out. It is uncertain whether these vines were more tender in consequence of the fires.

The question relative to the Barbarossa grape may be considered as settled. The Prince Albert and Barbarossa, if not identical, are so like as not to be worthy of distinctive names. The foliage and manner of growth, which is peculiar, is similar in both. The fruit is sweet, hard, good and valuable for its late maturity, but it is inferior to the Black Hamburg. I have suspended a part of a bunch of the Barbarossa with the Prince Albert on a fruiting vine. By testing the flavor and firmness of the berry in eating the fruit, first of one and then of the other, and by comparing the size and form of the berry, I have concluded that I can discover not the slightest difference in them.

The Prince Albert has been exhibited by me for several years (with the exception of 1856, when my vines did not fruit). The bunches are large, often weighing four and five pounds. The grapes vary in size, some being of the largest, some medium, and others small. I will soon send to your exhibition a specimen bunch of the Prince Albert for your examination. At this time the bunches still have unripe berries in them.

Respectfully yours,

JOHN FISK ALLEN.

Salem, Mass., Dec. 11th, 1857.

GRAPES—OPEN CULTURE.—It is but a few years since we could speak of our native grapes in higher commendation than we now speak of the wild grape of the woods, of a foxy smell and hard pulp. Such vines are often transplanted from their wild state to the homestead, with the expectation of an improvement in quality. The object is *futile*, for all manuring and care will never divest it of its hard pulp or foxiness. There are some who never have tasted anything better, and still adhere with tenacity to a hard pulp and strong foxy flavor, believing it the best grape grown. Such an one was the man who was recently shown a handsome bunch of the Rebecca, and advised to plant a vine of this variety. He insisted that he had a large white grape, which he had transplanted from the woods, and "so perfectly delicious was it, that it could be smelt over the whole house."

The new varieties have attracted much attention, since we have little or no hope of success with either the Catawba or Isabella, except in the most favorable location, in this region. Mr. Cutter has shown the Isabella, though hardly equalling those of past years, while Mr. Grant has shown the Isabella and Catawba. Some few others have shown the Isabella, grown in the city or in the immediate vicinity. This, however, is no criterion for general culture, for we have had Black Hamburgs, Sweetwater, and other tender grapes grown on walls in the city. What we want, is a grape of a quality not inferior to the Isabella, and ripening seasonably to insure a crop previous to the autumn frosts, and this we think we have in several new seedlings, unless the mildew should prove destructive—and, from its ravages the past season, we have reason to fear our worst predictions may be verified, unless, with the aid of sulphur, it should be stopped.

The CONCORD, so often spoken of heretofore, has ripened in many instances where the Isabella has failed. Mr. Bull has shown them in abundance, but few others have done so, probably for the reason that it has not been planted out a sufficient length of time to allow of a liberal show. Those shown by Mr. B. were large, both in bunch and berry, and few grapes prove more attractive than does the Concord, with its rich bloom overlaying every berry. It is a valuable acquisition, and Mr. B. is deserving of a liberal reward for his patient waiting, biding the time when the community will say he should be amply compensated for originating so valuable a grape.

The REBECCA has now become so popular for its early ripening, good qualities and hardiness that if not already in the hands of most grape growers, it soon will be. It is one of the most valuable grapes for out-door culture that has ever been introduced amongst us; and then, too, it is so easy of propagation, that in the hands of almost any person it can be multiplied ad libitum. A person procured one dozen vines in the autumn of 1856, and immediately commenced its propagation in earnest, as may be judged; for he assures us that from that dozen vines he should have ready potted and for sale, *three thousand* vines for the spring of 1858. We were glad to have such evidence of its readiness to propagate, believing that it should be in the hands of every one owning the smallest piece of ground.

Not so, however, with the **DELAWARE**; this proves one of the most difficult of propagation, either from eyes, cuttings or layers, hence it must for a length of time be procured with difficulty. We regret this, for it is one of the most valuable not only for its earliness of ripening, but for its hardiness in withstanding almost any degree of cold to which it can ever be subjected. The Chairman of your Committee has had a vine of this variety planted out for four years, which withstood the winter of 1856-7, without injury to the extent of a single inch of even the smallest shoot, while an *Isabella* of the same age and on the same trellis was killed, both root and branch; the *Diana*, alongside, was killed to the ground.

The *Delaware*, on its fourth year, was allowed to ripen fifty bunches, which, for the table, proved most desirable. As a table-grape we see no reason why it is not equal to the *Rose Chasselas*; at least, it is a good substitute for either that or the *Red Traminer*. The past season (for the first time,) it was subject to mildew, though slightly, when compared with other varieties in its immediate vicinity.

The mildew has been the most serious drawback we have to contend with in open culture; at least such was the difficulty the past season, and unless the application of sulphur will serve to retard it, we do not see any reason why we may not be obliged to abandon the culture of the vine. The free use of sulphur accomplishes its object under glass, and perhaps there is no good reason why it should not for out-door culture. The past season was so wet that the mildew was much more serious in its ravages than in any former period within our recollection.

The **UNION** (*Union Village*) has this year surpassed those of any former exhibition; the bunches weighed more than one pound each, and the berries were considerably larger than the general average of *Black Hamburgs* as we find them on the tables of the Society. The grapes were shown by E. A. Bracket, Winchester, and since Mr. Bracket prides himself on the introduction of this seedling (from the *Isabella*), it is fair to presume that by judicious thinning of the bunches and constant attention for the encouragement of its growth he was determined to astonish the public; however, what has been done can be done again by others who have been so fortunate as to possess themselves of a vine.

In corroboration of its resemblance to the *Black Hamburg*, we will mention an anecdote, which seems well vouched. A distinguished culturist of the vine, and probably the largest in this country, (who is a dear lover of this variety for his family board,) presented bunches at the exhibition of one of the most distinguished of our sister Societies, whose judges are not second to those of any kindred Association. Accompanying the grapes he sent a note, asking if they had ever seen better grown *Black Hamburgs*? So close was the resemblance of bunch and berry, that the highest premium was awarded the contributor as the best *Black Hamburgs*, and were not aware of their mistake till informed by the contributor. The berry has not the consistency of the *Hamburg*, while it possesses a sweetness at once distinguishable even to the most common observer, and it is fair to presume that the Committee neglected testing the fruit. It is one of the most rampant

growers, and Mr. Brackett *claims* that it will ripen as early as the Isabella. Of this fact we cannot speak any more decidedly till it shall have become more widely disseminated, and in other hands and other localities, for we should judge the location selected by Mr. Brackett as most favorable for the fruiting of the vine. On referring to Mr. Allen's communication it will be seen that the Union, as well as the Rebecca, did mildew. The Union, in possession of your Chairman, did not show a particle of mildew. It was planted in ground, the subsoil of which is a coarse gravel, and the field had been subsoiled to the depth of two feet or more. There was also in the same row, to stakes or posts, the Concord, Isabella (Cutter's,) Diana and Breck, none of which showed mildew in the least. To be sure, the drainage was, as a matter of course, good, and to this fact alone may possibly be attributed the escape from mildew.

The LOGAN is a new grape, and was this year introduced for the first time at our Annual Exhibition, by Geo. W. Campbell, Delaware, Ohio. It is a black grape, with a rich blue bloom, larger than the Diana, but not so large as the Isabella. The bunches were of the size of the Diana. We should judge that it must ripen earlier than any other grape with which we are acquainted, and this fact, added to its good quality and sweet flavor, will insure its rapid introduction to notice.

We have the pleasure of introducing the history (so far as known) of the Logan, from Mr. Thompson:—

DELAWARE, OHIO, January 9, 1858.

EBEN. WIGHT, *Chairman Fruit Committee Mass. Hort. Soc.*

Dear Sir:—In compliance with the request contained in your favor of 31st ult., I with pleasure give you such information as I am in possession of regarding the history of the *Logan Grape*.

My attention was attracted to it some four or five years since in one of the Miami Valley counties, where it was cultivated both as the Catawba and the Isabella, though bearing not a particle of resemblance to either, being as distinct from them in fruit, wood and foliage as is the Delaware. The authorities as to its origin I found conflicting—one party claiming that it came from the woods in Logan County in this State; the other, that the first vine is from one of a promiscuous lot of cuttings received from a distant friend, and planted by a lady. The first party claims that the fruit was cultivated in that locality long anterior to the planting of the cutting referred to—the other admits that the grape *he* refers to was cultivated before the cutting was planted, but insists that *hers* is a different, an earlier and a better fruit. My opinion, as at present advised, is that the fruit and vines are identical, the better location of that from the cutting (south side of a house) accounting for its earlier ripening. My opportunities for comparison have not, however, been such as would be desirable in order to warrant a positive decision; but I am now testing the matter myself, on my own premises, and hope soon to be able to settle that point.

The vine is a fair grower, leaves deeply serrated, wood short-jointed, and of that firm compact texture which is indicative of hardiness, the young

shoots covered with an outer bark of a peculiar gray color, and the old wood presenting an unusually rough and ragged exterior. It is a profuse bearer, the bunches, when left unpruned and illy attended, generally small and loose, but under good culture of good size, and compact; the berries nearly round, deep black, and covered with a handsome bloom; quality better, in my view, than the Isabella; and in this opinion I am sustained by most judges of fruit who have tested it. It is thoroughly hardy, and may, I think, safely be called our *very earliest* grape of good quality.

Not recognizing it as any grape with which we are acquainted, and being unable to have its identity established through others, myself and a horticultural friend and admirer of the fruit concluded to call it *Logan*, in reference to the supposed place of its origin, and as a compliment to the memory of the distinguished Indian chief of that name.

Yours, truly,

A. THOMSON.

Mr. Thomson is a distinguished horticulturist, and his name is familiar to the readers of the *Horticulturist* and *Hovey's Magazine* as the person who was most instrumental in bringing to notice the Delaware grape. Here we have, in the Logan, the promise of a grape, ripening earlier than almost any other, leading us to hope, that, ere long, through the aid of seedlings from this and others, we may attain all that we have desired in past years for open culture.

There are yet several other seedlings of great promise as to quality, earliness and hardiness, the properties of which we think we cannot be mistaken in, that will not be brought to the notice of the public till they shall have been most thoroughly tested by the originators.

We had intended saying something of seedling grapes, heretofore spoken of in former reports, but the room already occupied under this head prevents our extending the remarks at this time.

We introduce a letter from E. A. Brackett, in reference to the character of various new grapes, and their growth the past season:—

WINCHESTER, January 2, 1858.

EBEN. WIGHT, *Chairman of Fruit Committee of Mass. Hort. Soc.*

Dear Sir:—I have received your inquiry respecting my vines. I need not say that the past season has been a poor one for open culture. Almost every vine in my vineyard has suffered from mildew. My crops of the Diana, Concord, Isabella, and Wyman, were entirely cut off. Indeed the only specimens of ripe fruit I obtained were from the Delaware and the Union.

The Concord has never been a favorite with me as a table grape; but from some experiments I have made, and from samples I have received from Mr. Bull, I am satisfied that a wine may be made from it not inferior to the best brown sherry. If such should prove to be the case this grape will assume an importance that will more than compensate for any disappointment that may have been felt respecting its flavor.

The Delaware is a most desirable grape for this climate. It is a good bearer, ripening its fruit some three weeks earlier than the Isabella, while

the vine is as hardy as an oak. I received the Union grape from Mr. Longworth of Cincinnati. In his note to me he stated "that it was a larger grape than the Black Hamburgh, thinner skin, softer pulp and more juicy." I have found it fully up to his statement. With me it ripens from a week to ten days earlier than the Isabella. The fruit I have shown at your rooms has never received any special care or attention, and I have no doubt that bunches may be grown twice as large as any I have exhibited. It is an enormous grower, making wood double the size of any other vine. In a light sandy or gravelly soil it succeeds well, making short-jointed canes, and producing a good crop of fine fruit.

Those who follow the prevailing notions of grape culture, and plant this vine in one of those compost or manure heaps called borders, will be astonished at its growth, and still more astonished *when they see* the fruit.

It is important to those who wish to grow the Union grape in this section of the country, either to adopt the system of training detailed to you in a former letter, (see the Report of 1857,) or resort to some other method to check its over luxuriance.

Yours truly,

E. A. BRACKETT.

NATIVE WINE.—*Saturday, Sept. 19th.*—At the solicitation of Messrs. E. Paige & Co., of Boston, a full Committee, with the addition of several horticulturists from a distance, then attending our Annual Exhibition, made a visit to their manufactory and wine vaults, under the City Reservoir, where they found, in the process of pressing, several tons of native grapes; and were assured by Messrs. Paige & Co. that the whole amount they would make into wine this season would exceed sixty tons, yielding over 20,000 gallons of wine. The grapes were mostly from our own State, though several lots were received from Connecticut. One person from Cape Cod supplied about eight tons.

The space allowed us will not admit of our going into particulars; but we would call attention to the native grape as an object of profit, in many instances, since it can be grown in abundance, where it is planted by the side of a stone wall—the liberal price paid by Messrs. Paige & Co. affording compensation for the little care and labor required. As to the quality of the wine, although it was not of sufficient age to enable us to pronounce a positive opinion on it, some of our amateurs, who have had a more extensive acquaintance with other samples from the establishment of Messrs. Paige & Co., speak of it in terms of commendation. Messrs. Paige & Co. have also produced a brandy from the pulp and skins of the grape, after the juice had been expressed, which, according to the opinions of connoisseurs, is likely to become a valuable article for medicinal and other purposes.

MELONS.—For open culture the *Christiana* is the only variety which has been shown of marked superiority, and, as usual, the highest premium was taken by E. M. Richards. Mr. Richards first received his seeds from the late Josiah Lovett, the originator of this most excellent melon. Mr. Richards has not grown any other variety, and for this reason he has been enabled to keep it in its original purity.

NECTARINES, grown under glass, have been contributed liberally during the season by J. F. Allen and others. Those shown by Mr. Harris, gardener to H. H. Hunnewell, were the Stanwick, which eclipsed all others, both last year and the present.

PEACHES.—Forced peaches were more fully brought in this year, during the early months,—and subsequently to July we had handsome displays from houses without the aid of fire heat. Orchard culture proved almost an entire failure.

PEARS.—The season not having been very favorable to the pear crop, a limited number of new varieties have fruited the present year, and such as have been exhibited have not been very remarkable specimens. What we have said previously in regard to the excellence of our American seedlings, we have found verified by the experience of another year. Many of them were among the finest pears exhibited, and few handsomer specimens were shown than those of the Adams, Sheldon, Abbot, Boston, Seckel, Andrews, Lawrence, Merriam, &c.

Such a complete list of the principal varieties of pears presented at the Annual Exhibition has been prepared by Mr. Manning, that we need not occupy space in a more particular reference to them here; at the same time we cannot omit to mention a few kinds which struck us as unusually fine, even in this rather unfavorable season. These were the *Beurré Superfin*, which promises to become a valuable variety; *Beurré Sterckman*, very handsome; *Abbott*, another very excellent native pear; *Henkel*, of great merit; *St. Michael Archange*, large and fine.

Merriam, a native, which has seemed to escape the attention of pear cultivators, though known for several years, has been shown in remarkable excellence, attracting the attention of all by its rich warm russet hue, and satisfying all by its many fine qualities; it will become one of the most popular market pears, being an enormous bearer, ripening well, and coming in at a favorable season just after the *Bartlett*.

The *Supreme de Quimper*, exhibited by the Messrs. Hovey, proved one of the best early pears, quite equal to the *Doyenné d'Été*, and much larger; it will compare favorably with any of the summer varieties, of which the number is yet limited.

The *Beurré Clairgeau* has been exhibited by several cultivators, and in various stages of excellence as well as beauty. Though the Committee found much difference in the quality of the specimens tested, they believe that when the trees are more advanced and well established, it will prove equal to its reputation. Age is undoubtedly required with this as well as with many other pear trees, before the true qualities of the fruit can be ascertained. Its size and beauty, in addition to its good qualities, will render it a popular kind.

PLUMS.—The *Thomas* plum was shown by Messrs. Hovey; a handsome exhibition of the *Reine Claude de Bavay*, by J. B. Loomis. Also, a fine exhibition was made by Thos. Hastings, of the *Diamond*.

Henry Vandine has been enabled to continue his exhibition in its usual abundance. No one could compete with Mr. Vandine for quantity

and variety. Honorable mention could be made of others who have shown them, but we do not feel that it would be right to encourage the setting out of plum trees, while so many are cutting down their trees in consequence of the continued depredation committed by the curculio. The unsightly appearance which the trees bear, in almost every direction, makes them mere cumberers of the ground.

QUINCES.—The quince seems to have shared the fate of the apple, pear and cherry in the setting of its fruit, if we can judge from our own experience and the small number that have been shown. We might say of this fruit, that the crop has proved an entire failure, throughout the New England States.

RASPBERRIES.—Established varieties have taken the lead this season for all the prizes, yet the Committee still hold to the favorable opinion expressed of the Orange (a seedling by Dr. Brincklé) in their report last year.

A Sub-Committee found the Catawissa in a bearing condition in the grounds of Mr. Breck, who expressed a highly favorable opinion of the variety. Its greatest merit will be in the fact that it is one of the best for procuring seedlings from.

Most of the varieties which are in general cultivation claim to be hardy, withstanding our severe winters without protection. Many of them may be, yet it is better to turn them down and cover every autumn, as insuring an increased crop the following year. It is but little trouble to do it, and it will repay in the abundance of fruit which follows such care.

STRAWBERRIES.—Last year the Committee awarded Isaac Fay the Lyman Plate, valued at fifty dollars, for his seedling called "Jenny Lind," being the best seedling strawberry, after a trial of three years. Mr. Fay had exhibited his strawberry for more than three years, but the Committee believed the spirit and meaning of the prospective prize offered was that the fruit should have been tested in regard to prolificness, hardiness, &c., and of this fact we could not have a true knowledge, except through its dissemination. One of the very best strawberries ever grown, Hovey's, was disseminated over the whole country, and there was but one opinion expressed of it; all were unanimous in its favor, and it was some ten years after originating it, that the Society awarded Messrs. Hovey the Society's Plate, valued at fifty dollars.

Though a fruit should have been in the hands of the originator a length of time, and it may be for his interest so to retain it, we do not believe the Society is called on for the fulfilment of its offer under the head of "Prospective Prizes," till the Committee is satisfied that it is the best, in all respects, for the time being. The Jenny Lind strawberry has been shown the past season by several persons, and it has been uniformly good, though the best shown this season was Sir Charles Napier, by Messrs. Hovey.

PREMIUMS AND GRATUITIES AWARDED DURING THE SEASON.

For the best and most interesting exhibition of Fruits during the season, the Lowell plate, to J. F. Allen, . . .	\$15 00
For the next best, to Henry Vandine, . . .	10 00
For the next best, to C. S. Holbrook, . . .	7 00
APPLES.—For the best twelve Summer, to G. B. Cutter, for Williams, . . .	6 00
For the next best, to J. W. Foster, for E. Harvest, . . .	4 00
For the best twelve Autumn, to S. W. Fowle, for Alexander, . . .	6 00
For the next best, to John Washburn, for Fall Harvey, . . .	4 00
BLACKBERRIES.—For the best, to J. Nugent, for Dorchester, . . .	5 00
For the next best, to G. Merriam, for Dorchester, . . .	4 00
For the next best, to J. B. Moore, for Dorchester, . . .	3 00
For the next best, to J. W. Foster, for Dorchester, . . .	2 00
CHERRIES.—For the best, to J. W. Foster, for Black Eagle, . . .	4 00
For the next best, to W. R. Austin, for Black Tartarian, . . .	3 00
For the next best, to C. E. Grant, for Napoleon Bigarreau, . . .	2 00
CURRENTS.—For the best, to J. W. Foster, for Red Dutch, . . .	3 00
For the next best, to George Wilson, for Victoria, . . .	2 00
FIGS.—For the best twelve specimens, to Josiah M. Newhall, . . .	3 00
For the next best, to C. F. Jones, . . .	2 00
GOOSEBERRIES.—For the best specimens, to A. D. Webber, . . .	3 00
For the next best, to J. W. Foster, . . .	2 00
GRAPES.—For the best specimens grown under glass before the first Saturday in July, to Mrs. F. B. Durfee, . . .	8 00
For the next best, to Nahum Stetson, . . .	6 00
For the next best, to J. Fisk Allen, . . .	4 00
For the best specimens grown under glass subsequently to the first Saturday in July, to William P. Perkins, . . .	8 00
For the next best, to Lyman Kinsley, . . .	6 00
For the next best, to C. S. Holbrook, . . .	4 00
For the best specimens of Native grapes, to G. B. Cutter, . . .	6 00
For the next best, to C. E. Grant, . . .	5 00
For the next best, to K. Bailey, . . .	4 00
For the next best, to R. M. Copeland, . . .	3 00
MELONS.—For the best Musk melon, open culture, to E. M. Richards, for Christiana, . . .	2 00
NECTARINES.—For the best twelve specimens, to H. H. Hunnewell, . . .	3 00
For the next best, to S. G. Perkins, . . .	2 00
For the next best, to J. Fisk Allen, . . .	2 00
PEACHES.—For the best twelve specimens, grown under glass, to C. S. Holbrook, . . .	5 00
For the next best, to J. Fisk Allen, . . .	3 00
For the best twelve specimens, grown in open culture, to F. Dana, for Late Crawford, . . .	5 00
For the next best, to W. H. Ryder, for Early Crawford, . . .	4 00

For the next best, to C. E. Grant, for Coolidge, . . .	\$3 00
For the next best, to J. A. Stetson, for Late Crawford, . .	2 00
PEARS. —For the best twelve Summer pears, to Hovey & Co. for	
Boston,	5 00
For the next best, to Henry Vandine, for Muskingum, . .	3 00
For the next best, to A. D. Webber, for Rostiezer, . . .	2 00
For the best twelve Autumn pears, to Jacob Eaton, for Louise	
Bonne of Jersey,	5 00
For the next best, to J. F. Allen, for Beurré Bosc, . . .	3 00
For the next best, to T. Clapp, for Seckel,	2 00
For the best twelve Winter pears, to George Davenport, for	
Glout Morceau,	6 00
For the next best, to Wm. H. Ryder, for same,	5 00
For the next best, to John Gordon, for Beurré Langelier, .	4 00
For the next best, to Wm. Bacon, for Beurré Diel, . . .	3 00
PLUMS. —For the best specimens, to Henry Vandine, . . .	
For the next best, to Thomas Hastings,	3 00
For the next best, to Hovey & Co. for Thomas,	2 00
QUINCES. —For the best twelve specimens, to E. S. Rand, .	
For the next best, to J. A. Stetson,	2 00
RASPBERRIES. —For the best specimens, to J. W. Foster, for	
Knevit's,	4 00
For the next best, to W. R. Austin, for same,	3 00
For the next best, to L. Jennings, Jr. for same,	2 00
STRAWBERRIES. —For the best specimens, to Hovey & Co. for	
Sir Charles Napier,	5 00
For the next best, to M. H. Simpson, for Hovey,	4 00
For the next best, to George Leland, for Jenny Lind, . .	3 00

GRATUITIES FOR EXHIBITIONS DURING THE SEASON.

To Charles Heard, Brighton, for cherries, Hovey's Magazine one year.
 To J. H. Chadwick, for pears, Hovey's Magazine one year.
 To Oliver Bennet, for peaches, Hovey's Magazine one year.
 To C. F. Jones, for nectarines, Horticulturist one year.
 To S. J. Ruggles, for strawberries, Hovey's Magazine one year.
 To G. R. Sampson, for peaches, Hovey's Magazine one year.
 To Ignatius Sargent, for grapes, Appleton bronze medal.
 To E. A. Story, Jr., for mulberries, Horticulturist one year.
 To F. & M. Burr, for apples, Hovey's Magazine one year.
 To W. W. Wheildon, for the same, Hovey's Magazine one year.
 To N. Stetson, for Shanghai peaches, Society's silver medal.
 To B. Luscomb, for B. Clairgeau pears, Hovey's Magazine one year.
 To A. Corey, for Merriam pears, Hovey's Magazine one year.
 To E. A. Brackett, for Union grape, Horticulturist one year.
 To William Page, for pears, Hovey's Magazine one year.
 To J. Haley, for the same, Hovey's Magazine one year.
 To B. C. White, for grapes, Horticulturist one year.

- To J. Plympton, for pears, Horticulturist one year.
- To P. T. Homer, Hovey's Magazine one year.
- To J. B. Loomis, for plums, Hovey's Magazine one year.
- To Bowen Harrington, for apples, Horticulturist one year.
- To Eben. Wight, for Delaware grapes, Hovey's Magazine one year.
- To Wm. Brooksbanks, for Rebecca grape, silver medal.
- To Thomas Waterman, for grapes, Horticulturist one year.
- To J. Cass, for grapes, Hovey's Magazine one year.
- To J. B. Moore, for currants and blackberries, Horticulturist one year.
- To Eben. Wight, for Bloodgood and Julienne pears, Horticulturist one year.
- To B. Gifford, for pears and plums, Hovey's Magazine one year.
- To Nathan Durfee, for peaches, Hovey's Magazine one year.
- To E. A. Story, for apples, Hovey's Magazine one year.
- To Francis Marsh, for the same, Hovey's Magazine one year.

The premiums and gratuities awarded at the Annual Exhibition will be found in our last Vol. (XXIII.) p. 475.

Horticultural Operations

FOR FEBRUARY.

FRUIT DEPARTMENT.

Up to the time we write, (the 20th), January has been unprecedented for its mildness and freedom from storms of snow or rain. The temperature has not fallen below 15° but once or twice, and there has been no day but what it has thawed in the sun, and but a few in which it has not thawed in the shade. Violets, buttercups and some other flowers have been in bloom in warm localities, and the whole month has been more like the last days of March than the season of mid-winter. Throughout the entire country the same mild weather has prevailed, and the ground is as bare of snow, and almost of frost, as in November. We think we may safely say, that no such winter has been experienced by the "oldest inhabitant;" certainly we have no recollection of one so uniformly mild. Such favorable weather has been advantageous to the cultivator. Very light fires have been required in the forcing-houses, and consequently the trees and plants have a more healthy and vigorous appearance than when grown under the influence of strong fire heat.

GRAPE VINES in the early houses will now be maturing their crop, and after the fine weather it should have a good color; keep the house dry and well aired, and the fruit may be preserved in fine order for a long time. Vines in greenhouses and graperies will now begin to break, and will require careful attention. Do not hasten them too fast by high night temperature; air moderately and maintain a humid and genial atmosphere by good syringing in the afternoon, just as soon as the house is closed, and damp down the floors after the fires are lighted. As the laterals advance,

rub off the superfluous buds, and tie in the others to the trellis. Hardy vines may now be pruned and trained up to the trellis. Cuttings may be put in and forwarded in the hotbed.

PEACH TREES in pots, now in bloom, should have an abundance of air, or the fruit will set poorly.

STRAWBERRIES in pots, now in bloom, should also be well aired, otherwise they will not swell up their fruit.

SCIONS of fruit trees may be cut this month.

PEAR, APPLE and other fruit trees may now be pruned. Where there are large collections it is necessary to begin early, and nothing is lost by commencing at once.

ROOT GRAFTING may be forwarded now before the out-door grafting commences in March.

FLOWER DEPARTMENT.

The greenhouse and conservatory now present as gay an aspect as they usually do a month later in the season. The absence of strong fire heat has been favorable to a stocky and vigorous growth, and the warm sun has brought forward many flowers. As the appearance now is that the winter will be short and probably not severe, work will crowd rapidly, and the month will be a more busy one than usual. Propagating, potting and re-potting must be attended to, and everything done to keep up with the season.

CAMELLIAS still continue in bloom, but by the close of the month will begin to grow, unless in very cool houses. As soon as this is perceived, syringe often, water more freely, and slightly increase the temperature. Inarching must be done before the plants begin to grow.

AZALEAS will now begin to flower, and the watering should be more regular and abundant. If slightly shaded, they will continue in beauty for a long time. Young plants should be potted and put into heat if large plants are wanted.

MONTHLY CARNATIONS will be growing vigorously and showing abundant bloom. Increase the stock by layers or cuttings.

CINERARIAS.—Early plants will now be in full bloom. For later flowering, young vigorous plants should now be repotted, and the whole stock have a general shift. Fumigate often if the green fly is troublesome.

FUCHSIAS should now be set to work. Late autumn-struck cuttings make fine pyramidal plants if pushed along in a little heat. Shake them out of the old soil and put into smaller pots. Syringe often, and stop the shoots as they advance in growth.

PELARGONIUMS will now begin to grow rapidly, and must have careful attention. Water sparingly; give them more room and plenty of air. Tie out the shoots as they grow, but do not stop them unless very late bloom is wanted.

CALCEOLARIAS should be repotted. Unless a good stocky plant is obtained the bloom will be weak.

RUNNING PLANTS, such as *Stephanotus*, *Cobæa*, *Maurandias*, &c., should be brought forward and trained to neat trellises.

JAPAN LILIES should all be potted this month. Water sparingly till the shoots have advanced an inch or two.

ACHIMENES AND GLOXINIAS should be turned out of the old soil and repotted. Those started last month may be potted off now. Keep them in the warmest part of the house.

BEDDING PLANTS of all kinds must now be looked after. A good stock should be obtained, and early struck plants are the best. Scarlet Geraniums, Salvias, Verbenas, Lantanas, Petunias, and indeed every showy kind, should be propagated in quantities.

SEEDS of many annuals may now be sown for early blooming in the borders.

HEATHS, intended for next year's blooming stock, should be repotted soon. Keep the shoots topped to induce a stocky and handsome growth. Keep in the coolest part of the house, where they will have an abundance of air.

HOLLYHOCKS may now be propagated from cuttings, and the plants will bloom finely in the autumn. Harden off the early cuttings in frames.

PANSIES in pots should be looked over, and, if cramped for room, may be repotted. Seeds sown now will make good early blooming plants for the borders. Cuttings of choice kinds may be put in this month.

ROSES will now be making a vigorous growth and showing flower buds. Keep the plants well watered, occasionally using liquid manure. Syringe often if the weather continues fine, and fumigate if the green fly is troublesome. Tie out and regulate the shoots if fine specimens are wanted. Young stock in small pots should be shifted into larger size.

DAHLIAS wanted for early bloom, or for an increase of stock, should now be potted and placed in the greenhouse, where they will soon give plenty of cuttings.

COLD FRAMES, after the late warm weather, should be opened and aired, if the weather continues favorable. Look over and pick off any decayed leaves.

VEGETABLE DEPARTMENT.

With February the attention of the gardener should be directed to the growth of all the choicer vegetables which may be forwarded a month or two with the aid of good hotbeds. We need not detail how to make these, as it would be an unnecessary repetition of directions we have before given. As soon as they are ready, which should not be later than the middle of the month, all the rarer seeds may be planted.

CAULIFLOWERS, BROCCOLIS, TOMATOES, EGG PLANTS, &c., should be sown in pots.

LETTUCES, RADISHES, CRESS, &c., should be planted in the beds.

CUCUMBERS AND MELONS should be sown in pots, and beds should be in readiness for hilling out the plants in due season.

CABBAGES of the different early sorts should be sown.

PEAS may be obtained very early by sowing in pots or on sods, and transplanting to the open ground in April.

FRUIT CULTURE IN THE WEST.

THE progress of fruit culture in the West, though receiving a check by the severity of the winter of 1855 and 1856, still moves onward with wonderful strides. With a soil which requires no manure, nor, in most cases, any preparation, and with a climate as favorable as our country affords, there is certainly nothing wanting but energy, industry and skill, to render it the fruit garden of the world. True we hear of one foe to that richest of fruits, the pear—the blight—which may somewhat dampen the ardor of some cultivators; but its attacks are not constant, nor its effects, with due care, generally fatal; and before the light of better intelligence and careful experience we may hope such information will be obtained as will enable all to guard against injury, and that eventually the cause may be discovered and a remedy understood. With other fruits there appears to be nothing more to contend against than we have at the East. There is a want of proper shelter, in the wide expanse of level prairie, but so speedily can suitable protection be afforded by plantations of the more rapid growing forest trees, which give additional value to all lands, besides the shelter they afford, that there is nothing to prevent the West from becoming the most fertile fruit region of our country.

The fruit cultivators of Ohio have held annual or biennial meetings for several years with a view to disseminate valuable information upon fruit growing, and otherwise aid in fostering the increasing taste for fruit culture, and we have now before us the Transactions of the Eighth Session of the Ohio Pomological Society, held at Cincinnati on the 14th of September, and also at Columbus, on the 8th of December last. It contains the discussions upon the various fruits presented at the two meetings, and reports received from various parts of the State in reference to the growth of trees,—the effects of the late severe winters,—the varieties best adapted for general cultivation—and the insects injurious to the

orchardist. As they afford not only much valuable information to the great West, but incidentally to the East, we shall lay before our readers such portions of the report as will interest all who are engaged in the cultivation of our finest fruits.

The meeting was opened with an Address from the President, Mr. A. H. Ernst of Cincinnati. The Address is replete with interest, but we can only spare room to refer to his remarks upon those prevalent and fatal maladies—the blight—and rot of the grape. Upon these Mr. Ernst thus speaks:—

CAUSE OF THE BLIGHT.

“We have seen the effect of two successive winters, equal in intensity of cold, on the growth of the two preceding but dissimilar summers; from which it is manifest that a low degree of temperature is not always or so much the cause of destruction, as the *previous condition of the tree or plant*. And here I apprehend we have the key to the whole secret of the disease termed *fire-blight*; the tree being stimulated into luxuriant growth, forming a porous and delicate tissue. In this condition the sun’s rays act on this tissue; the sap is scalded, and becomes vitiated, when vegetable mortification takes place, which, soon spreading by means of the sap, produces disease and death in other parts of the tree, if not arrested in its progress by lopping off the affected part. If the tree or plant escapes this disease, and passes into the winter with immature wood, it is likely to share the same fate from frost, though the injury may not be fully consummated until return of vegetable activity in the coming spring and summer.”

MILDEW OR ROT.

“In this connection I would especially call your attention to the mildew and rot of the grape, which proved so destructive to the crop this season, and which will, if not arrested, materially interfere with the culture of this healthful luxury. Whether this is owing to the adoption of the European method of culture and treatment by our vine-dressers, as not suited to our soil and climate, or is the result of other causes, are matters on which there is much difference of opinion, and is

worthy of your serious consideration. It cannot be that in a country where the grape abounds and flourishes in a wild state, it should not also flourish in a state of cultivation, if the method of culture is correct, and not destructive to the health of the plant. The fact that varieties which were healthy, and perfected their fruit regularly and uniformly, do not do so now, or at least precariously, is certainly suggestive of something wrong in their treatment. It cannot arise from a worn-out soil, from which all the substances for their healthy action have been abstracted, or they would still maintain their former healthfulness, when transferred to new soil. This is not the case; all share alike in similar soil and location. Is the plant not enfeebled in its power to produce fruit by the severe pruning to which it is subjected in our climate?"

These remarks deserve the serious reflection of all cultivators. We believe with Mr. Ernst that there is something wrong in the treatment of the Native Grape, that in its native climate it should be subject to such fatal diseases.

The discussions upon fruit occupied the greater part of the time of the Society. We copy the most important portion of these discussions:—

PEACHES.

COOK'S SEEDLING.—Originated from seed by J. S. Cook of Walnut Hills. A very large and beautiful freestone, resembling Crawford's Late. Ripens a few days later, (last of September) and thought to excel that variety in quality of fruit, and also in productiveness. Mr. Cook and Mr. Sayers testified that it was a remarkably free bearer, and excellent peach, admirably suited for marketing, being very handsome, and bearing carriage well.

GRIFFITH. (The same as *Susquehanna*.)—A fine, large, yellow-fleshed peach: Skin yellow, with red cheek. Originated on the grounds of Mr. Griffith, on the banks of the *Susquehanna* River, Pa. [Why it is called Griffith is not stated. It has already been described in our account of the Meeting of the American Pomological Society at Philadelphia, Vol. XVIII., p. 492.]

CARTER'S LARGE.—A seedling of Pennsylvania, large, handsome, resembling Oldmixon Free. Tree very hardy, and a sure bearer: Blossoms large.

STUMP OF THE WORLD.—Mr. Bateham said this was one of the brag peaches of New Jersey. Mr. Bocstoce said it was a fine peach, and a great bearer—the trees apt to bear too full, rendering the fruit under size.

OLDMIXON FREE, CRAWFORD'S EARLY, AND COOLEDDGE'S FAVORITE were each pronounced superior varieties.

Other sorts were discussed, but the information elicited was not decisive of their merits.

GRAPES.

HALL.—A seedling raised by Dr. Hall of Urbana. Berries of medium size, dark color; larger and better flavor than Clinton, but not equal to Isabella. Specimens quite ripe; said to be earlier than Isabella, or Catawba. [It is not much praise to compare any grape with the Clinton.]

JAMES'S SEEDLING, from J. H. James of Urbana. Not ripe, and history not given. Resembles the Catawba. Said to be hardier and earlier.

APPLES.

BOHANNON.—A fine southern apple, from Kentucky. Fruit medium or large, roundish, conical, somewhat angular, or ribbed: Skin smooth, pale yellow, with a blush: Stalk rather short: Flesh yellowish, tender, sub-acid. Somewhat of the character of Maiden's Blush, handsome, fine for cooking and market, but not first rate for dessert.

KIRKBRIDGE WHITE from Indiana was pronounced identical with the Bohannon.

CAROLINA RED JUNE.—Considered by some as the most profitable of all summer apples; begins to ripen at the same time as the Early Harvest, and continues in season two months or more. Tree vigorous, and abundant bearer.

LATE STRAWBERRY, (Autumn Strawberry.)—A good grower and very early bearer in Illinois. Considered valuable.

AMERICAN SUMMER PEARMAIN.—Universally commended as one of the handsomest and best apples of the season.

GRAVENSTEIN.—Well known as one of the best early fall apples.

RICHMOND, New.—Originated in Sandusky, Ohio. Fruit large, roundish, handsomely striped: Flesh white, tender, juicy and good. October to February.

STRIPED BELLFLOWER.—Supposed to be a seedling; fruit large, shaped like the Bellflower, beautifully striped; flesh very tender, pleasant but not high flavor. October and November. Commended as deserving trial.

JEFFRIES.—New, from Pennsylvania; medium size, roundish, yellow, with red stripes; flesh white, tender, juicy, and very good. September and October. Not much known.

HAWLEY.—Promises well at the West. Tree vigorous and productive.

MAIDEN'S BLUSH.—Highly approved in Illinois. Fruit always fair and handsome, very good for cooking. Sometimes first rate. Recommended for general cultivation.

FALLAWATER.—Known in the West under a great variety of names, particularly as the *Tulpehocken*, *Pound* and *Dutch Pippin*, &c. Fruit large and fair; good for cooking and for market. Promises well for Southern Ohio.

KAIGHN'S SPITZENBERG.—Another apple with a host of synonyms. Highly popular as a market fruit in some sections.

BLUE PEARMAIN.—Large, showy, and good, when in perfection, especially for market and cooking; not so reliable as at the North and East.

WHITE PIPPIN.—Well known, and maintaining its high reputation as one of the best winter apples for Central and Southern Ohio. Not known at the East, and its origin not yet traced out. Is not identical with the *Canada Reinette*.

WHITE PEARMAIN of Indiana.—A very popular Western apple, which has puzzled pomologists to find out its true name and history. Much grown, and highly esteemed. Distinguished from the Michael Henry by the yellowish seeds.

MICHAEL HENRY PIPPIN.—Closely resembles the last, and the two are often confounded. The two are similar in appearance, but the flesh of the Michael Henry is sweeter, and less crisp, and not equal to the other in its general quality.

ROMAN STEM is similar in appearance and character to the two preceding, and is quite popular as a late winter apple in some localities at the West.

MILAM.—Highly esteemed at Chillicothe and vicinity as a market apple, and rapidly gaining popularity.

RED SEEDLING.—Originated in Ross county. Mr. Bateham said the beautiful appearance of this apple, in connection with its excellence, will make it a favorite. Indeed, he thought it might prove a better substitute for the Lady Apple than any other sort. He promised to obtain scions and more information about it.

ERNST PIPPIN.—Obtained from Mr. Ernst, the President of the Society, and supposed to be a seedling. Recommended as deserving of trial.

LONG ISLAND PIPPIN had the character and appearance of Peck's Pleasant, with which the description corresponds.

NEWTOWN PIPPIN.—Conflicting opinions were given in regard to this fine old fruit. In some places it succeeds, in others it does not. The difference between the green and yellow varieties was discussed, but nothing conclusive was elicited.

BELFLOWER.—One of the very best winter apples in many localities. Mr. Ernst said there was a disposition in some quarters to condemn it. Mr. Bateham said it was fine around Columbus, and Dr. Warder confirmed this in regard to Central Illinois.

ROME BEAUTY.—The Committee were unanimous in commending this apple as one of the handsomest and best, especially for the South, and for market. Tree a fine grower, and good bearer. Not quite first rate in quality.

BROADWELL.—Maintains its quality as a fine winter sweet apple; the Committee recommended it as deserving extended trial.

ORANGE SWEET was considered by some as the best sweet apple of its season, which is October and November.

WINTER SWEET PARADISE.—Mr. Bateham considered this the best dessert winter sweet apple within his knowledge, and for baking it was only excelled by Tolman's Sweeting. Mr. Ernst thought it not superior to the Broadwell.

TOLMAN AND DANVERS WINTER SWEET were both pronounced excellent.

VANDERVERE.—Considered by the Committee the true Newtown Spitzenberg; is one of the very best winter apples in Central and Southern Ohio.

MELON, quite new, but highly recommended for trial.

KING, of Tompkins County.—Not yet fruited in Ohio, but recommended for trial.

NORTHERN SPY.—This apple has done well in Madison, Indiana, and also at Louisville and St. Louis. The fruit was large and fine.

OHIO NONPAREIL.—From the researches of Mr. Bateham he has proved this to be the **COGSWELL**, as we have intimated in a previous volume. The apple which he procured in Philadelphia was identical. We doubt not the former name will be discontinued.

ROXBURY RUSSET.—A good apple, but the trees appear more tender than other sorts, hundreds having been winter-killed in 1856.

SMOKE HOUSE.—Not so highly esteemed as in Pennsylvania. Mainly valued for culinary purposes.

BALDWIN.—Fine specimens were shown, but no opinion expressed in regard to this favorite apple.

HUBBARDSTON NONSUCH.—Succeeds well with Dr. Petticolas, near Cincinnati.

DUTCH MIGNONNE.—A large and rich looking apple. Good for market, and recommended for trial.

SMITH'S CIDER.—Mr. Bateham knew of no other variety unless it was Rome Beauty for which there was so great a demand as for this. Exceedingly profitable as a market apple, though not quite first-rate. Very hardy, and suitable for unfavorable localities. Mr. Bateham suggested that the Cider should be dropped, and the apple known simply as the Smith.

A very large number of new seedlings, or unknown varieties, were presented, some under name and others without, but we have not room to enumerate them, and as the merits of the larger part were quite unknown, the information would be of little value. Some were recommended for trial, and others considered worthless.

PEARS.

The discussion on this fruit was brief, and only a few of the older and well-known sorts were brought forward. No new facts were elicited in regard to them.

We have already remarked that the Committee invited cultivators to send in lists of the most popular varieties of apples which succeed well with the writers, and a long list of letters from various counties in the State are appended to the Report. The Secretary has made a summary of them, and he concludes as follows :—

WHAT HAS BEEN LEARNED.

“ From an attentive perusal of the foregoing communications, (and many more in the office of the State Board of Agriculture,) we draw the following inferences :

“ 1. That very great loss of fruit trees resulted from the extraordinary winter of 1855–6 ; nearly all the peach and heart-cherry being destroyed ; and in some parts of the State very many apple trees, but not so general a loss of these as many persons had supposed.

“ 2. As a general rule, there is not much difference in the *hardiness* of the different varieties of fruits, especially of peaches and sweet cherries ; and in regard to apples, the difference is much less than was generally supposed ; as many of those reported as tender in one locality, or by one writer, are classed as hardy by others. The principal exceptions seem to be in reference to the Belmont, Rhode Island Greening, E. Spitzenberg, and Roxbury Russet, which are reported as most generally injured by the winter.

“ 3. The effect of the previous crop had no perceptible influence in rendering the tree liable to injury by the winter ; but more was dependent on the condition of the wood as to ripeness—those trees which, from richness and moisture of soil, made a late and luxuriant growth the season previous, were most injured by the winter. For this and other reasons, elevated or hilly lands are found most favorable for apples, as well as peaches and cherries.

“ 4. The damage to the apple crop by rotting, scab, rust,

&c., is not by any means general, but confined mostly to the south-western quarter of the State, the limestone, clayey soils, and is worst in the rich valleys or plains; but can generally be guarded against by a judicious choice of varieties, and proper pruning and culture.

"5. The varieties of winter apples best adapted for the districts just named, are not those generally known and approved in Northern Ohio and in New York, but varieties of Western or Southern origin; as, Rome Beauty, Rawles' Janette, Smith Apple, Milam, Limber Twig, Wine Sap, White Pippin, White Pearmain, Broadwell, &c. At the same time, it is found that the popular Eastern and Northern fruits continue to succeed well in most parts of Northern Ohio, and on the more hilly and sandy lands in the eastern parts of the State.

"From the reports of twenty-five northern counties, to the State Board of Agriculture, giving answers to the question, 'Which are considered the best six winter apples in your county?' the votes stand as follows:

R. I. Greening, - -	20	Roxbury Russet, -	16
Rambo, - - - -	18	Baldwin, - - - -	13
E. Spitzenberg, - -	18	Y. Bellflower, - -	11

"The next in order were Belmont, G. Russet, Canada Red, and Newtown Pippin, from six to ten votes each.

"The reports from the southern half of the State (and western central) were less numerous and more diverse in character, recommending more or less of the southern list first above given, along with a few of the northern, according as the writers were more or less extensively acquainted with varieties."

THE BOTANICAL AND HORTICULTURAL LITERATURE OF THE OLDEN TIMES, WITH REMARKS ON THE SPECIES AND SORTS.

BY JOHN L. RUSSELL, PROF. BOT., ETC., TO MASS. HORT. SOCIETY, &c., &c.

PART II.

BEFORE commencing the examination of the list, I shall quote from the "Two Voyages" a passage, showing the im-

pression made upon our author by the sight of the "Rarities" of this country.

"The plants of *New England* for the variety, number, beauty, and virtues, may stand in Competition with the plants of any Countrey in Europe. JOHNSON hath added to GERARD's Herbal 300: and PARKINSON mentioneth many more; had they been in *New England* they might have found 1000 at least never heard of nor seen by any *Englishman* before: 'Tis true, the Countrie hath no *Bonerets* or *Tartarlambs*, no glittering Colored *Tuleps*; but here you have the *American Marry-Gold*, the *Earth-nut* bearing a princely Flower, the beautiful leaved *Pirola*, the honied *Colibry*, &c. They are generally of (somewhat) a more masculine virtue, than any of the same species in *England*: but not in so terrible a degree, as to be mischievous or ineffectual to our *English* bodies."—*Collections of the Massachusetts Historical Society*, Vol. III. of the Third Series, p. 251.

Our author, in thus apologizing for any want of such marvellous "rarities" as were attributed to other savage and little known countries, yet feels justified in the narrative of the choice productions of this country, which he verily thought were unknown to any observer previous to him. STRUYS, who travelled through Russia, Tartary, &c., in the middle of the seventeenth century, tells us of these *bonerets* or *tartar lambs* as follows: "On the western side of the Volga there is an elevated saltplain of vast extent, but wholly uncultivated and uninhabited. On this plain, grows the *Boranez* or *Bornitsch*. This wonderful plant has the shape and appearance of a lamb, with feet, head and tail distinctly formed. *Boranez*, in the language of Muscovy, signifies a little lamb, and a similar name is given to the fern," (*Aspidium Báromez*.) It is said by Burnett, in his *Outlines of Botany*, volume first, § 884, that the rhizoma or creeping rootstalk, when the fronds are removed, does present a rude resemblance in its shape to the figure of an animal, whence the foregoing, and indeed much other mysterious and marvellous story-telling have arisen.

Interested, however, in our own choice and valuable vegetable wonders, and in the quaint and original way in which the early New England flora is treated, I begin, by way of

preface, in the remark, that Josselyn's names will be given in italic letters, as they stand in his Treatise, and all quotations beside, from him, will be duly marked by the inverted commas, preserving the original spelling and modes of expression.

1. OF SUCH PLANTS AS ARE COMMON WITH US IN ENGLAND.

Hedgehog Grass. Some kinds of our Carices, whose bristly spikes suggest the trivial name.

Mattweed. This is *Spartina stricta*, or Saltmarsh grass. PARKINSON tells us that "there be sorts of grasses, that serve to make mats and such other workes, which doe grow in wet and moorish grounds near the seaside."

Catstail. This is *Typha latifolia* or reed-mace, the same trivial name being still employed.

Stitch wort. A species of *Arenaria*, and accounted of much value by English simplers "to helpe stitches in the sides."

Blew Flower de luce. The beautiful Iris versicolor of our wet swampy places, without doubt, and perhaps the Iris prismatica besides.

Yellow bastard Daffodil. Probably *Erythronium americanum*.

Dogstones, a kind of Satyrion. *Liparis* or perhaps *Orchis*.

Water cresses. *Cardamine* sp.

Red Lillies, "which grow all over the country innumera-
bly among the small bushes, and flower in June," are our *Lilium philadelphicum*, mistaken for *Lilium bulbiferum* of the gardens.

Wild Sorrel. *Rumex acetosella*.

Alder's tongue. The Adder's tongue, or *Ophioglossum vulgatum*, a small and pretty fern, the frond of which resembles a tongue in shape.

One blade. *Smilacina bifolia*, or our pretty Solomon's seal, with its one leaf, such as we find now in its young and undeveloped condition before old enough to flower.

Lilly Convallie. This name seems to signify something like our garden Lily of the Valley, but PARKINSON sets us right by indicating a species of *Solidago*, and probably *S. sempervirens*.

Water Plantain, "here called water suck leaves." This is our *Alisma plantago*.

Sea Plantane, three kinds. These three kinds of Sea plantain were *Plantago maritima*, *Triglochin maritimum* and *Státice limonium*, as I consider at a venture.

Small Water Archer. A quaint name to specify the Arrowhead, *Sagittaria angustifolia*, while his *Autumn Bell Flower* reminds us of the exquisite fringe gentian, *Gentiana crinita*, whose blossom is an inverted bell. The *Veratrum viride* of the spring is next introduced, as suggested by this rich and lingering blossom of latest autumn, by way of extremes, which he calls the *White hellebore*, a slight error, but very pardonable. The description of it is precise and graphical, as follows: "The first plant that springs up in this country, and the first that withers; it grows in deep black mould and wet; in such abundance that you may, in a small compass, gather whole loads of it." It is not singular that this fine native plant thus attracted the eye of the author, because it is so similar to the *Veratrum album* of Europe. He discovers that it is a famous Indian remedy, the roots being powdered and laid on wounds, employed for sundry aches, and even for that most outrageous and least endurable of all, the toothache. These acrid properties introduce us next to *Polygonum hydropiper* and *P. persicàrca*, also acrid weeds, bearing then, as they do now, names of no fastidious nicety, and whose repetition are needless, as they are well known to most readers, under the synonym of heart-smart.

And, while dealing in acrid plants, another is presented to our minds by the mention of *Spurge-Time*, which I take to be *Euphòrbia polygonifolia*, as "it grows upon dry, sandy Sea Banks, and is very like to Rupterwort." Another "*Rupterwort*, with the white Flower," is probably *Euphòrbia maculàta*, the true rupturewort of England, or *Herniària glàbra*, not being indigenous. The supposed efficacy of these and similar plants being found to be fallacious, they have long been discarded from modern pharmacopæias. The *Hydrocotyle americana* is probably the "*Jagged Rose pennywort*." These thick leaved plants seem to remind him of "*Sòda bariglia*, or massacote, the ashes of Soda, of which they make Glasses," a not very lucid statement, but expressive of our *Salsòla Kàli*, still common on sandy sea shores; while we dis-

cover that "*Bariglia*" is only the Italian word for barilla. The "*Glasswort*, here called Berrellia, which grows abundantly on the salt marshes," is our *Salicornia herbacea* and *S. mucronata*, and sometimes called samphire. These plants may be seen in an autumnal glory of richest crimson color upon the salt marshes between Lynn and Chelsea; and the novelty of the sight suggested to some verdant writer in one of the Boston papers, a few years ago, the striking and new features in the introduction of splendid flowers upon the said meadows since the raising of the embankment of the Eastern Railroad track, and partial damming out of the tide on portions intended for the erection of buildings and houses!

That very common and unpleasant weed in our soils, especially thin and gravelly ones, *Hypericum perforatum*, was known to our author under the name of *Saint John's Wort*, and its saintly co-species likewise *Saint Peter's Wort*, or *Hypericum ellipticum*. Some such saintly odor or virtue seems requisite to render them endurable to any but a botanist. "The several species of *Hypericum*, or St. John's Wort," says an English botanist, "have handsome yellow flowers, and many are very ornamental plants in shrubberies. *H. perforatum* is the *Fuga dæmonum* of the old herbalists, and is the plant formerly so much in repute for its supposed influence in conjurations and enchantments; and even now the French and German peasants gather it with great ceremony on St. John's day, believing it to be a preservative against thunder; and the Scots formerly carried it about their persons as a charm against witchcraft." Of St. Peter's Wort we are not so well informed, but I am inclined to the belief from the fact that being found in such company our ingenious author attached the name to another sort of *Hypericum*, as I have already suggested. His *Speedwell Chickweed* may be *Veronica serpyllifolia*, a delicate, little, bluish-flowered weed in grass lands, looking somewhat like Chickweed, and yet being a veritable Speedwell. In our *Linaria canadensis*, with its slender racemes of small, blue and elegant flowers, and grassy, delicate linear leaves, borne upon a many-branching stem, one of the last, lingering, blossoming plants of mild autumn weather, and so hardy as to be content with any

gravel pit or sandy road-side, we have our author's *Male Fluellin* or *Speedwell*. This species of *Linaria* is in some repute among our country doctors, as a relief in toothache, the chewing of the plant producing some effect on the salivary glands; and by exciting the action of our national vice of ptyalism, it may find favor in other eyes than those of herbalists and simplers of olden times.

In rich pasture lands among bushes, we find two or three species of *Pycnanthemum*, with pungent, aromatic, spicetasted leaves, and these seem to have suggested our author's "*Upright Peniroyal* and *Wild Mint*." It is only on the side of roads, and near stone walls, where refuse rubbish has accumulated for several years, that we find *Nepeta cataria* or *Catnep*, yet our author gives it honorable mention as if a common and native plant at the time of his visit, as follows, "*Cat Mint*;" evidently having his mind upon the selfsame plant of which the old herbalists tell us with great gravity that it "is the ordinary garden sort of some and the mentha felina, because cats doe delight both to smell and eate thereof and gladly rub themselves against it."

Egrimony is none other than our *Agrimonia Eupatoria*, long celebrated as a vermifuge: and PLINY relates that EUPATOR, king of Pontus, took it as a medicine, a valuable testimony to its real or supposed virtues.

The Lesser Clot Bur, is *Xanthium strumarium*, said to be naturalized from Europe, and found now about barnyards and outbuildings of farms.

"*The Water Lilly, with Yellow Flowers*," is our *Nuphar advena*, mistaken for the *Nuphar lutea* of England. This latter is common in ponds and rivers there, as our species is with us. The thick fleshy rootstalks are eaten by swine and goats, but kine, horses and sheep refuse them. The rootstalks of *N. Advena* of this country are fed upon by "the Moose Deer, at which time the Indians kill them, when their heads are under water," and so peculiarly fitted for food under straitened circumstances are they, that we are told that "the *Indians* eat the roots, which are long boyling: they taste like the liver of a Sheep."

Our curious and beautiful Indian turnip, or *Arum triphyl-*

lum, reminded our author of the famous English *Dragons*, but the leaves of those which grow here "differ from the kinds with us, they come up in June." Unlike our "New England rarity," the British *Dragons* or *Arums* are coarser, and inconspicuous, rather fiercer in aspect, and seemingly more venomous. Several highly singular and even splendid species are found in other climates, as *Arum dracontium*, *polyphyllum*, *dracunculus*, &c., &c., which might have been familiar to him at home.

An early ramble in our woods, or on our hill-sides, in the vernal months of the year, after a cold and snowy winter, would attract our author, who, bent on the natural history of this country, no doubt hailed the "*Violets* of three kinds—the white violet, which is sweet but not so strong as our Blew violet," (doubtless the *Viola blanda*,) "Blew Violets, without scent," (*V. cucullata*, and similar,) "and a Reddish Violet, without scent; they do not bloom till June." This mention of said reddish violet is very interesting. On the rocky pasture grounds near Brattleboro', Vt., I found several roots in full blossom, of what I take to be a red variety of *Viola primulæfolia*. Attempts to introduce it into cultivation by sowing its seeds failed me, the more to be regretted because it would have been quite an addition to our garden sorts. The deliciously perfumed violets of modern gardens are the true English *Viola odorata*, or what are called Neapolitan or tree violets. Our scentless sorts must have been the occasion of vexatious disappointment on this score, faintly atoned for in the delicate odor of the White Violets of our wet meadows. This rich perfume of British Violets seems to float on the air, as we recall it to our imagination, telling us so plainly of the warm sunshine of early spring, and the promise of other sweet blossoms to succeed. It reminds me of the enthusiasm of an English gardener, who, allowing that New England surpassed Old England in number of species, yet maintained, with an unanswerable argument, that the single species of the blue scented *V. odorata* was worth them all!

Lonicera (*Xylosteum*) *ciliata* seems to have been the shrub designated as *Woodbine*, to which marvellous virtues are assigned. The fine, old, garden plant, *Polygonatum multiflorum*,

rum of Britain is put for *P. latifolium* of our woods, and called *Salamon's Seal*, of which he adds, "there are three kinds," the second being *Virginian Salamon's Seal*, or our *P. biflorum*: "And the third, differing from both, is called Treacle Berries, having the perfect taste of Treacle when they are ripe." This is our *Smilacina racemosa* described by PARKINSON in glowing terms, whose berries are "each of the bignesse of a Juniper berry, yellowish before they be ripe and finely spotted with blood red speckles, which after they have so long abidden are worn out by the ripening of them and changed red like a cherry, whose pulp or juice is sweet." These remarkable treacle berries "are certainly Medicinable and a very wholesome berry." The joints of *Polygonatum vulgare* of England when cut across present some resemblance to the impression of a seal; and the scars left by the old stems upon the rootstalks (roots) or rhizomas even of our American species bear a similar appearance. From these circumstances the plant has been called Solomon's Seal, that extraordinary Jewish monarch figuring largely as a magician in some oriental literature.

Several sorts of Geraniums come under our notice now, such as *Dovesfoot*, *Geranium carolinianum*?, *Herb Robert*, *G. Robertianum*, *Knobby Crane's Bill*, *G. maculatum* perhaps. Of *Raven's Claw* it is asserted "that it is admirable for Agues," from which I am inclined to consider it some species of *Ranunculus* with acrid leaves, and these bearing the resemblance to the foot of that bird, as the divided foliage of *R. scleranthus*, for instance, does. In *Cinque Foil* we have our *Potentilla canadensis*, and in *Tormentilla*, our *P. argentea*? The true *Tormentilla* of England was so designated for its astringency and supposed virtues in dysentery, but we know of no similar value in any of our cinque foils, though their generic name refers to their *potent* qualities in medicaments. EATON classes the *Potentillas* among the tonics. In *Gèum album*, which is said to resemble much the *G. urbanum* of Europe, we have the "*Avens* with the Leaf of Mountain *Avens* and Root of English *Avens*." Our author finds the plants and fruit of *Fragaria virginiana*, and takes it for *F. vesca*, and these are strawberries of the new world.

The noble Archangélica atropurpurea, and perhaps Osmorhiza brevistylis, remind him of "*Wild Angelica, majoris and minoris*;" while his *Alexanders*, "which grow upon Rocks by the Sea Shore," is Ligusticum scóticum? Yarrow, with the white flower, is none other than Achillæa millefolia, similar to that of Europe. In the Orkneys it is reputed as a curative of melancholy; but whether specific, I am unable to say: suffice that its cheerful flowers are favorites with some, who do not despise vulgar weeds, and the elegant roseate variety is a desirable garden plant; supplanted, indeed, by the slenderer growing kind, to which I find the name of *speciosa* given, among gardeners and amateur florists. The "Columbines of a flesh colour, growing upon Rocks" tell of Aquilégia canadénsis, whose nodding blossoms help make merry and glad many a girl and boy in spring time, especially if found on some early May day: nor are they ungrateful of the cultivation bestowed upon them, improving in size, contour, and even color, and admirable among foreign species.

The Chenopodium botrys seems to be "*Oak of Hierusalem*," and our Bitterweed or Roman wormwood, so troublesome in neglected potato fields, the Ambròsia artemisiæfólia, the *Oak of Cappadocia*. Goose grass or *Clivers* is some species of Galium, and *Fearn* is the Saxon name for Pteris aquilina or "Brakes," which we still call ferns. *Woodsorrel with the yellow flower* is Oxalis stricta, confounded with O. corniculata. Some botanists, even now, deem them identical.

Of trees, our Ulmus americana was taken for U. campéstris, and we seem to have borrowed the name of *Elm* from the latter. The *Line tree* "of both kinds" refer to Tilia americana instead of Tilia europæa, while the old Herbals explain the two kinds, viz., a male and a female kind, an evident error. We call it Linden or Lime tree, hence Lin and next "*Line tree*:" the old spelling being the most correct. Basswood is likewise applied to it, from Bast, a term applied in northern Europe to the thin inner bark, from which mats used by gardeners, and to wrap cabinet wares, are manufactured. This tough fibrous inner bark is also called in physiological botany bast fibre, and in the Dirca it is of extraordinary tenacity and strength. Here we have borrowed a Russian

word, perhaps; and by corruption applied it to the Linden tree as Basswood. Species of *Acer* indicate "Maple" which our author saw, but whether the Red, White, or Yellow maple he does not enlighten us about.

In grasses he finds the *Devgrass*, which we now call Orchard grass and Cock's-foot grass, or *Dactylis glomerata*.

The *Earth nuts* attract his attention, which he says "are of divers kinds, one bearing very beautiful flowers," and we recognize *Aralia trifolia* as one kind, and *A'pios tuberosa* as another. Why this latter has not received more attention as an appropriate vine to cover rural arbors in gardens, nowadays, I can only attribute to the fact that its frequency on our old stone walls precludes its being considered as a "rarity" to be sought for abroad. Its rich chocolate blooms are redolent of the perfume of mignonette, while its persistency in inflorescence should give it some merit. "Far sought more prized" still obtains to too great a degree among our horticultural maxims.

NOTES ABOUT NEW PEARS.

BY HON. J. M. EARLE, WORCESTER, MASS.

WE are constantly met, at almost every turn, with objections against the multiplying of varieties of fruit, especially pears, and he, who can throw out a sneer at the introduction of new kinds, is almost sure of favor in certain quarters. To the authors of these objections, I would call attention to the fact, that all our best standard varieties, at the present time, with some two or three exceptions, are *new* kinds; that the Bartlett, Seckel, Marie Louise, Dix, Beurré Bosc, Urbaniste, Louise Bonne de Jersey, Beurré d'Arenberg, Winter Nelis, &c., &c., were to be found on no nurseryman's Catalogue, in this section, thirty years since, and that, of the varieties on their Catalogues at that time, not five are now deemed worthy of general cultivation. This, then, shows us the advance that has been made by the introduction of new kinds, and holds forth the promise of still greater advance for the future.

Still, I am well satisfied, that, among the vast numbers of new kinds, that have already been brought out, and that will be in the future, a comparatively small portion, only, will be eventually deemed worthy of general cultivation. Trial and experiment must prove which these are; and, while a portion, like those above named, will combine the various qualities which go to make up a first rate fruit, such as vigorous growth, free bearing, good size, long keeping, fine quality, and adaptation to various soils, climates, and modes of culture, to such an extent as to make them general favorites, another and a larger portion will be found so deficient in one or more of these requisites, although excelling in other respects, that they will eventually be cast out, or will be found only in the collections of amateurs.

In relation, therefore, to the multitude of new kinds of pears, which have been produced within a few years past, by the pomologists of Belgium, France, England, and this country, the adaptation of which to general culture has not yet been satisfactorily established, it becomes important that the knowledge acquired by experiment, in various places and by different individuals, should be placed before the public, affording the means of comparison, and of coming to a satisfactory result, as to the relative value of the several kinds. With this view, and in the hope that it will induce others, whose experience and means of judging are more extensive than my own, to publish the results of their experience, I have selected from my notes such notices of new kinds fruited by me during the last three or four years, as I thought would be useful to those who feel an interest in the subject, and have appended them hereto:

ALEXANDRE BIVORT.—I have fruited this kind three years. It has not yet come up to my expectations in size, being rather under medium, and is not always fair, but may improve in these respects, as the tree grows older. Quality very good. December and January.

ALEXANDRE LAMBRE.—Fruited three years. Tree vigorous and *very* productive. Fruit, medium, or twice the size of the above, very fair and handsome, melting, juicy, sweet, and high flavored. Very good, or best for those who like the pe-

culiar flavor, which is something between the Colmar and Bergamot. November to January.

ANANAS D'ETE.—Tree of moderate vigor and rather productive. Fruit large, pyriform, swelling out near the middle and contracted toward the eye; surface uneven; skin pale yellow; flesh half melting, juicy, sweet, with an agreeable flavor. September. This is the pear usually cultivated under this name, but it does not correspond with Downing's description.

BARBANCINET.—Fruited two years. Tree of good vigor and very productive. Fruit of good size, melting, sweet and very good. It will probably be a profitable market fruit. First of October.

BARONNE DE MELLO.—First received by me as the Beurré Van Mons. Synonymous, also, with the Adele de St. Ceras or St. Denis. Fruited three or four years. The tree is a good grower and very productive, bearing good crops every year. Fruit medium size, russet, in form nearly resembling the Brown Beurré, but rather more pointed at the stem. Melting, juicy, sweet, and excellent, with a fine combination of the acid and sweet. It is fully equal to the Brown Beurré in its best state, and one of the most desirable kinds in cultivation. Ripens in October and lasts six weeks. It does not rot at the core.

BEAU PRESENT D'ARTOIS.—This is a handsome pear, of good size, and appears to be productive. It promises well, but, having fruited it but once, I am not prepared to give a decisive opinion on its merits. September.

BERGAMOT DUSSART.—Productive. Of medium size, and appears, from one season's trial, to be very good. November to January.

BEURRE' BENOIST.—Very productive. Size medium, melting, juicy, and fine flavored. September and October.

BEURRE' CLAIRGEAU, (pron. Clare-zho.)—Tree of medium vigor on the quince and a great grower on pear. It is a good bearer. It is very large, and the most beautiful of pears. I have fruited it two years, and the quality has been *very good*. I have heard occasional complaints that it was indifferent in quality. I attribute this to its being grown on trees so young

that they were not able to bring so large a fruit up to its natural flavor, and believe that, as trees get age, the fruit will be not only of satisfactory quality but very profitable.

BEURRE' DEFAIS.—This is a good grower and is productive. Fruit large and handsome, melting, juicy, sweet, and good. It is a fine keeper, lasting through February and most of March. The smaller specimens, from young trees, do not always ripen well. They will probably do better as the trees grow older. Those which do not ripen are excellent for cooking.

BEURRE' DEROUINEAU.—Tree of great vigor and quite productive. But the fruit has not yet answered my expectations. The two first years of bearing they were very indifferent, but the past season were much better. Medium size, handsome, flesh somewhat deficient in juice, rather firm, but buttery, sweet, and aromatic. Requires further trial.

BEURRE' GIFFARD.—Very early, coming early in August directly after the Madeleine. It is the most beautiful and best pear of its season; of good size and reasonably productive. No one should be without it.

BEURRE' GOUBAULT.—I have fruited this four years, and it has been uniformly poor. I have seen it in other situations, on quince, very good.

BEURRE' KOSSUTH.—One season's trial of this variety gives promise of great excellence and productiveness. It is large, handsome, sweet, juicy, and fine flavored.

BEURRE' MILLET.—This is a very productive variety. Fruit medium size, roundish, skin coarse, dark russet, the quality from two seasons' trial promises well, but requires particular care, otherwise it shrivels and does not ripen well.

BEURRE' PHILLIPPE DELFOSSE, called, also, **BEURRE' DELFOSSE.**—This, after two seasons' trial, appears to be the Belle de Noel. Of course it is very good.

BEURRE' SUPERFIN.—Tree vigorous, and does not come very early into bearing. Fruit large, beautiful, and of the highest excellence. Very valuable and desirable.

BEZI DE MONTIGNY.—This excellent pear is put down in the European catalogues as ripening in September. I have never ripened it till the latter part of October. If let to hang late,

it is one of the best keeping winter pears, in eating in February and March, and even into April. When gathered late it requires some care to prevent its shrivelling, in which case it is apt to not ripen at all.

BROOM PARK.—Tree vigorous and productive. When well cultivated it is a first rate winter pear. On young trees it sometimes does not ripen well, but, as the tree grows older, it ripens in great perfection. The size varies from small medium to large, according to its culture.

CATINKA.—Tree a good grower and very productive. This fruit is of but moderate size and not very prepossessing in appearance, but, for the two past seasons, has been uniformly fine flavored, refreshing, and excellent in quality. November.

CLARK PEAR.—This is a pear cultivated in Hartford, the origin of which is, as yet, unknown. The tree is a fine grower, but does not come quickly into bearing. Fruit rather above medium size, short pyriform or turbinate, as broad as it is high; flesh somewhat coarse, very tender, melting, juicy, with a refreshing and agreeable flavor. A desirable variety. October.

COMTE DE FLANDERS.—Tree a good grower. Fruit good size and handsome. It promises to be first rate, but having fruited it but one year, I am not prepared to speak decisively of its merits. November.

COMTE DE PARIS.—I have fruited this three or four years. The tree is a good grower and bears early and well. The fruit is good sized, fair, and very good, but decays very quickly, and having a very thick, coarse, dark green skin, which does not change color at all in ripening, it frequently becomes entirely decayed and soft within, while retaining its perfect form, and before its ripeness is suspected. As it requires such close watching and examination, I do not consider it worthy of cultivation.

DUMORTIER.—A very delicious little pear. The tree grows well, and gives promise of productiveness. I have fruited it but two years. November.

DES CHASSEURS.—This tree grows well, and appears to be productive. I have fruited it only the past year, when the quality was very good. It ripened late in October.

DES NONNES.—Tree of moderate vigor, and very productive on both pear and quince. Fruit rather small, round, smooth, and handsome, melting, juicy, and rich, with a high perfume, which, to some tastes, is objectionable, while others consider it very fine.

DOYENNE' DEFAIS.—Tree of medium vigor and productive. Fruit medium size, somewhat firm, but tender, juicy, sweet, perfumed, and delicious. It has the very desirable character of not rotting at the core, and keeps a long time when ripe. November and December.

DOYENNE' GOUBAULT.—Tree of medium vigor on pear, less vigorous on the quince, and very productive. Fruit, large-medium size, broad obovate, depressed, slightly russeted; flesh rather firm, melting, juicy, sweet, and deliciously perfumed. The character of this pear, when in perfection, is more nearly like the Beurré Bosc than any other kind with which I am acquainted. It has the same firmness of flesh, the same exquisite sweetness, and is higher flavored than that fine variety. The first two or three years, this fruit does not ripen well without special care in keeping, but as the tree acquires age it improves in that respect. December to April, and remains a long time after ripening.

DOYENNE' ROBIN.—A good fruit of medium size, juicy and good flavored. Promises to be productive and profitable.

DUMAS. [*BELLE EPINE DUMAS.*]—Very vigorous and productive. Fruit of medium size, and always of first rate quality. November and December.

DUNMORE.—A good grower and productive. Fruit large and handsome. I have eaten it when very excellent, but, on young trees, it is, usually, very austere. Whether it will lose that character as the trees grow older remains to be tested. October.

FREDERIKA BREMER.—The first year this fruited I had my doubts of its value, but subsequent experience proves it to be an excellent and desirable variety. Tree a good strong grower, and sufficiently productive. Fruit large.

GANSEL'S SECKEL.—This exquisite fruit was raised by Mr. Williams of Pitmaston, England, and not by Mr. Gansel, as stated in the new edition of Downing's Fruit Book. It is

a seedling from the Seckel, fructified by Gansel's Bergamot. Tree of moderate vigor, with a habit like the Seckel, and of remarkable productiveness, sometimes breaking down the branches, with the weight of the fruit. Fruit, Bergamot shaped, covered with a thin, delicate, light brown russet, varying from small to medium; flesh very fine, buttery, juicy, sweet and deliciously perfumed, quite equal in flavor to the Seckel. It ripens immediately after that variety, and continues in eating from the latter part of October, through November and December, never rotting at the core. One of the most desirable of all the new varieties.

GENERAL DE LAMORICIERE.—Another delicious fruit of the highest quality. Tree a good grower, and gives promise of productiveness. Fruit medium sized, obovate; skin covered with a thick, rather dark russet; flesh very buttery, juicy, finely flavored and perfumed. October. A most promising variety, judging from two years' fruiting.

GRASLIN.—Tree vigorous and productive. Fruit large and handsome, sometimes excellent, but somewhat variable on young trees. Will probably improve in this respect by age. October and November.

JULES BIVORT.—Tree moderately vigorous and very productive. Fruit medium size, very handsome, melting, juicy, sweet, and very high flavored. A desirable kind, ripening in October and November.

KIRTLAND.—Tree a very vigorous grower, and productive. Fruit from small to nearly medium, regularly obovate and handsome. Skin covered with a bright yellowish russet; flesh rather coarse, but melting, juicy, and very sweet, with a delicate aromatic flavor. This belongs to the same class with the Capsheaf and Hadley, and would, perhaps, be preferable to either, but that, like the latter, it quickly rots at the core, unless gathered very early and ripened in the house. Middle to last of September.

LA JUIVE.—Tree of medium vigor on pear, but weak on the quince. Fruit juicy, very sweet and highly perfumed. Excellent, variable in size, and not always fair.

MADAM ELIZA.—This is another valuable acquisition. Tree vigorous and strong on pear root, making a fine pyramidal

top, and quite productive. Fruit from medium to large, regular pyriform and pointed at the stem, very beautiful in its general appearance. Skin smooth, light green, with more or less thin russet patches, and with carmine spots about the stem. Flesh tender, melting, juicy, sweet, and finely perfumed. First rate. November. Keeps well, and does not rot at the core.

MARECHAL DE COUR, called also CONSEILLER DE LA COUR, and DUC D'ORLEANS.—This is a vigorous tree, and said to be very productive when of sufficient age, but does not come into bearing so soon as some other kinds. Size from medium to large. Flesh melting and juicy, with a remarkably fine and piquant flavor, excelling most known varieties. A very worthy and desirable variety, ripening the latter part of October.

NOUVEAU POITEAU.—A very vigorous and productive tree. Fruit very large and of the first quality, if seasonably eaten. If too long delayed, it becomes soft and clammy. November.

OTT.—This is a small pear of exquisite quality, the best, perhaps, of its season, (August,) said to be a seedling of the Seckel, and doing no discredit to its imputed parentage. Its small size, and the comparatively moderate growth of the tree, will probably prevent its general culture as a market fruit, but it is so exquisite in quality, that no amateur can afford to be without it.

PASSE' COLMAR FRANCAIS.—Tree vigorous and very handsome; productive. Fruit medium size, a good keeper, lasting till March. This promises well, but, with only one year's trial, I am not prepared to speak decisively of its merits. The foreign authorities speak of it as "*de toute premiere qualitie*."

PRINCESS CHARLOTTE.—Tree of medium vigor and quite productive. Fruit nearly medium size, obovate. Skin green, sometimes colored towards the sun. Flesh melting, juicy, sweet, with a rather high and excellent flavor. Very good. October.

PRINCESS HELENE D'ORLEANS.—Tree, a good grower on pear, coming early into bearing, with promise of productiveness. Fruit medium to large, and of excellent quality. One

year's trial of this pear gives us a very favorable impression of its excellence and value. (Syn. Duchesse Helene d'Orleans.)

SAINT JEAN BAPTISTE.—Tree of vigorous and strong growth. Fruit large, very regular and beautiful. Skin light yellowish green, slightly russeted. Flesh melting, very juicy, sweet and vinous, with a fine flavor. A very promising variety.

SAINT JOSEPH.—This proves to be synonymous with the Delices d'Hardenpont of Belgium, an excellent kind.

SOLDAT LABOUREUR.—Tree a good grower on both pear and quince. Fruit large medium, regularly pyriform. Skin light green, becoming yellow as it ripens. Flesh somewhat firm, like the Sieulle, but melting, juicy, and excellent. Ripens in November and keeps well, without rotting at the core.

SORLUS.—Tree vigorous and productive. Fruit large and handsome. Flesh coarse, very juicy, and of pretty good quality, though it does not yet come up to its European character.

SUPREME DE QUIMPER.—A beautiful and very good August pear; not quite equal in quality to the Beuré Giffard, but more productive, and a handsomer growing tree.

TRIOMPHE DE LOUVAIN.—This promises to be a very productive and profitable orchard and market pear. The tree is a vigorous grower and an early and free bearer. Fruit large and handsome; skin russeted and high colored toward the sun; flesh melting and juicy, with a good share of the fine flavor peculiar to russet pears. The greatest objection to it is, that, if not seasonably gathered, it inclines to rot at the core. October and November.

TOMBE DE L'AMATEUR.—The trees of this kind came to me with a very high recommendation of the fruit, which it probably deserves, for it appears to be identical with the Nouveau Poiteau.

WREDDOW.—This is a fine and very delicious fruit, of medium size, ripening early in October, but the tree appears to be so poor a grower and so delicate, as to make it not worthy of cultivation, except to the amateur, who raises a great variety.

ZEPHERIN GREGOIRE.—This is a very favorite variety. Tree of pretty good growth, about like the White Doyenné, and an

early and free bearer. Fruit of medium size, very fine and beautiful, of a bright green, becoming yellowish as it ripens. Flesh very melting, buttery, vinous, and of a most delicious flavor. It ranks in the very first class, and is worthy of extensive cultivation.

My own experience fully confirms the fact with which experienced pomologists are familiar, that the quality and value of a new fruit cannot be certainly determined by the product of the first two or three years' bearing of young trees or grafts. It is a rule of very general application, that the product of young trees is much inferior to that of those which are more matured. The Marie Louise, Beurré d'Arenberg, Glout Morceau, and some other varieties that rank in the very first class, are often quite worthless the first two or three years, and I have known cases of the same kind with the Winter Nelis and Seckel. When, therefore, a new variety, coming with a good reputation, fails to be good, at first, I wait patiently for the tree to attain such maturity as will enable it to perfect its fruit, and do not hastily cut it off and re-graft it, as is too often done. In view of these considerations, I have spoken less decidedly in reference to some of the varieties named in the foregoing list, and have entirely omitted others, to which I have given but a partial trial.

THE HARTFORD PROLIFIC GRAPE.

BY DANIEL S. DEWEY, HARTFORD, CONN.

THE prominence which is given to the subject of *Grapes for open culture*, in the February number of your valuable Magazine, induces me to trouble you with an allusion to a grape which has become quite notorious in this vicinity; but which, from some cause, seems not to be sufficiently well known and appreciated elsewhere. I refer to the HARTFORD PROLIFIC.

Public attention was first called to this grape, in your Magazine, six years ago, (No. CCVII., p. 114,) and, judging from the statement then made, you say, "That, owing to the uncertain maturity of the Isabella, the Hartford Prolific will be

a desirable acquisition, particularly in localities unfavorable to the Isabella."

In the Transactions of the Connecticut State Agricultural Society for 1854, it is spoken of, in a communication from Dr. Russell, as having been exhibited to the public for the five or six preceding years—as ripening in the early part of September—and is recommended with confidence, as being "altogether the best grape of the season with which we are acquainted."

The Records of the Hartford County Horticultural Society show that the Hartford Prolific has been exhibited for *nine consecutive years*, as ripe from the 30th of August to the 10th of September; and it is described as a "seedling of merit;" perfectly hardy; very productive; and of a good, sweet flavor;—"an excellent grape, and far superior to any native variety ripening at this season."

As to comparative flavor, good judges have pronounced it, in some cases, nearly equal, and, in others, quite equal, to the Isabella. It has, uniformly, surpassed the Concord.

Mr. Henry Little, of Bangor, describes it, in the *Horticulturist*, "as a good, *early* grape—a highly valuable variety for *Maine*, where it is sure to *ripen*." If such be the fact, it will certainly be *reliable* for all New England, and corresponding latitudes farther west.

The Massachusetts Horticultural Society's Committee on Fruits, for 1857, in their Report, (*Mag. Hort.*, Feb., 1858, p. 93,) say: "What we want is a grape of a quality not inferior to the Isabella, and ripening seasonably to insure a crop previous to the autumn frosts."

How far the Hartford Prolific Grape will answer these requirements, you, and your readers, can easily decide from the foregoing brief and imperfect, but authentic statement.

POMOLOGICAL GOSSIP.

ABOUT GRAPES.—There appears to be no limit to the introduction of new hardy grapes; already they form a goodly number, though, as regards the quality of all, we have not

such reliable information as we need to pronounce upon their precise value. That they may all be very good grapes we do not doubt. But we need more than this. In the addition of new kinds we want none inferior to such as we already have, and such as will not come up to this level are of very little use. Perhaps some may think this is not sufficient, but that, with few exceptions, all our grapes are poor enough, and we should have far better sorts to command general attention. Undoubtedly the latter is the correct view of the case; but until we can know which are the best, it may be well to cultivate a variety, and eventually eradicate the poorer ones as the better become established.

Mr. Samuel Miller of Calmdale, Pa., who has given considerable attention to the culture of American grapes, has given a brief account of several kinds in the *Horticulturist*. As some of them are new to our Eastern cultivators we copy his remarks respecting them:

CASSADY.—On a little bit of a plant, set out in the fall of 1855, he had last season at least two dozen bunches of very handsome Cassadys, which fruit was pronounced by some good judges as the best at the table where Catawba, Concord, Isabella, and a number of others were shown. Vine hardy, and a strong grower; bunch medium; berry hardly medium, the whitest of all the natives, but little pulp, sweet, with an aroma not to be excelled by any foreign variety.

WILMINGTON.—A very handsome and good white grape; bunch handsome shouldered; berries oval, medium size, and of a greenish yellow color, but such as are termed white. Supposed to be a native; quite hardy and productive.

LOUISA.—A seedling of Mr. Miller's; resembles Isabella very much, but has fewer seeds than that or any other American grape with which he is acquainted. A prodigious bearer with but poor culture, and will, in size of bunch and berry, quality of fruit, &c., compare very favorably with most American grapes.

MARY ANN.—A seedling raised by J. B. Garber, Columbia, Pa. Bunch medium size; berry medium, quite oval, black, with peculiar brownish cast; skin not thick; pulp small, and a rich, exceedingly sweet flavor. Ripens among the earliest

of our good grapes; strong grower, hardy, and an excellent bearer.

MARION.—Bunch medium; size of berry medium; black, very round, harsh and unpleasant till cool weather, when it is rich and agreeable. Juice exceedingly dark, and will make a splendid wine. Will most likely prove valuable at the North.

LEHMAN.—A splendid large bunch, and berried grape; nearly white, but rather late, unless in good exposure. Raised by Wm. Lehman of New Lebanon, from the Black, crossed by the Isabella.

Among the recent new grapes Mr. Miller speaks highly of the Concord, Rebecca, and Delaware. "The Concord needs no comment. When well cultivated in our latitude it is a first rate grape; and for market, for the masses, will hold the lead for the present."

WILD GRAPE FROM CANADA.—A new grape, found by Mr. Wm. H. Reade of Canada West, on the banks of the Chipewa River, in the year 1855, and thus described by him in the Country Gentleman:—

Bunches very handsome, symmetrical, good size, compact, heavily shouldered; berries medium size; skin thin black, covered with a bloom; flesh tender, melting, without pulpiness, foxiness, or musky flavor, sweet and excellent. The wood is strong, short-jointed, of a reddish iron color; foliage very large and thin, green on both sides, having no hair or cotton, and unmistakably shows no kin to the Fox. Important as a parent to cross with foreign grapes, on account of its extreme hardiness and early maturity, as I found it ripe on the 10th of September, on the original vine, in 1857. The original vine runs through and covers the entire tops of two medium sized elm trees, and appears a full century old,—a wilding of great beauty. How it came there no one knows,—probably carried by birds from some Frenchman's garden.

MYERS' HONEY-HEART CHERRY.—This is the name given to a new seedling, the original tree of which is yet standing in Springfield Township, Bucks Co., Pa. It is a healthy, vigorous grower, forming a round head, has large flowers, and is very productive. The fruit is of the largest size, of a regular

heart-shape, with the sutures extending half round. Color rich red. Flesh pale yellow, juicy, sweet, and of high flavor. The fruit is borne on long stems, and is in season the middle of June. Mr. J. G. Younkin of Allentown, Pa., who furnished the above account of this new variety to the *Horticulturist*, considers it the most profitable of all he cultivates.

THE ALEXANDER PEAR.—Our correspondent, Mr. J. B. Eaton of Buffalo, describes a new native pear under this name in the *Horticulturist*. It originated in the village of Alexander, in Genesee County, the seed having been planted thirty-five or forty years ago, by a Mrs. Churchill, who had brought it from Connecticut. Specimens from Mr. Ely's tree were presented at the Exhibition of the Fruit Growers' Society held in Buffalo, September, 1855, and then first attracted Mr. Eaton's attention. Several pomologists who were present at the New York State Fair last fall, when Mr. Ely again presented specimens, thought it could be nothing less than that fine pear, the Gray Doyenné, from which it is, Mr. Eaton thinks, entirely distinct. Eaten with the Beurre Bosc, which Mr. Eaton had ripe at the same time, he had no hesitation in deciding the Alexander was the superior in flavor. It is of nearly medium size, with a yellowish green and russeted skin: Stem long, curved and fleshy at the base: Eye small, set in a narrow basin: Flesh white, little coarse, and somewhat gritty at the core, melting, and very juicy: Flavor sugary, rich and very fine. Ripe from the last of September to the middle of October. The engraving of the fruit accompanying the description greatly resembles the Gray Doyenné. Still it may be similar, and yet be a new variety. The Sheldon so strongly resembles the Gray Doyenné, that we at first thought it that old pear.

DOWNING'S EVERBEARING MULBERRY.—A new seedling raised by C. Downing of Newburgh, N. Y., from the *Morus multicaulis*, some twelve years ago. The tree is vigorous, hardy and productive. Its foliage is large and fine, making it altogether an ornamental as well as valuable tree. It begins to bear the third or fourth year, and the fruit increases in size as the tree attains age. The fruit ripens in succession, from July 1 to September 1, producing a never-failing crop of the most lus-

cious fruit, which measures from one to one and a half inches in length, and half an inch in diameter. Color purplish black. If perfectly hardy it will be a most valuable variety.

WARDIAN CASES, OR PARLOR CONSERVATORIES.

BY THE EDITOR.

It is now more than twenty-five years since Mr. N. B. Ward, of London, first accidentally discovered the process of growing plants in what is now generally and most appropriately termed the Wardian Case. In the course of his entomological studies, he placed the chrysalis of a sphinx in some earth, in a glass bottle covered with a lid, in order to obtain a perfect specimen of the insect. After a time, a speck or two of vegetation appeared, which he watched with the deepest interest. They turned out to be a fern and a grass, and continued to grow and maintain a healthy appearance. Reflecting upon the results of this accidental experiment, he came to the conclusion that as air, light and water are all the requirements of plants, and they were contained in the bottle, they could be so raised, under similar conditions, on a much larger scale. Subsequent experiments proved this, and hence the origin of the Wardian Case, now dignified with the title of Parlor Conservatories.

The discovery has been attended with the happiest results. It has introduced living specimens of some of the most curious and beautiful forms of vegetation into the parlors and windows of the crowded dwellings of cities, where before the dust and smoke and darkness prevented the healthy growth of the commonest plant. It has afforded the means of preserving, in all the freshness, verdure and fragrance of the native fields and pastures, plants only raised by the assiduous hand of the cultivator, in the pure country air. However so much we may pet and tend the most favorite plant, the confined, overheated and unventilated air of our parlors, even out of the city, is so inimical to vegetable life, that it rarely presents other than a sickly, lank, etiolated and uninviting

aspect. But the Wardian Case changes all this. Not only does it preserve the fresh verdure of its tenants unimpaired, but in it many delicate plants may be raised which refuse to display their highest beauty, even under the charge of the most skilful gardener. Such are some of the ferns, Lycopods, &c.

At the last annual exhibition of the Massachusetts Horticultural Society, some very pretty specimens of these Wardian Cases were exhibited by Messrs. Graff & Sons, of New York, an engraving of which we annex, (FIG. 6,) to whom the Society awarded a Silver Medal. They have, we



6. WARDIAN CASE.

believe, introduced quite a number of these into the parlors of New York and Brooklyn, where they have been greatly admired. They are made on a larger or smaller scale, and adapted to a variety of plants, though those that require the least care are such as are filled with ferns, Lycopods, &c., which need but little ventilation and but a small amount of light. For blooming plants a somewhat different arrangement is necessary, and more care in the management.

Our object now is to call the attention of lovers of fresh verdure to these Wardian Cases, that they may find an introduction into the parlor or bay window of every dwelling.

The form and size of the cases may be as varied as the taste of the possessor may desire. A simple vase of iron or artificial stone may be properly prepared and planted, and when covered with a handsomely shaped glass case, the work is done.

The case, from which our engraving is a copy, is of a neat and convenient size. It measures twenty-two inches in diameter, and eighteen inches high. The bottom is of zinc, covered with black walnut, and the glass case fits in a rim on the top. The plants are properly planted and arranged, and the glass then put on, after which it will not require removing but a few times during the year. Messrs. Graff & Co. give the following directions in regard to their management:—

As regards the treatment of our Parlor Conservatories, the following may serve as a guide. During the winter they may be kept in any room or parlor, whose temperature ranges from 40 to 70 degrees, so near the window as to afford them sufficient light; during the month of January and February they may be exposed to the rays of the sun; as soon, however, as it gets higher and consequently more powerful, they should be protected from its full force during the middle part of the day, as its concentrated rays would burn the plants. In very cold nights, when there is danger of frost getting into the room, a thick woollen blanket or a skin should be put over the glass bell. In the spring keep them in a sufficiently light place in the parlor, giving sun only early in the morning, and during the summer in the coolest place of the house, with plenty of light but scarcely any sun. When the room or parlor, in which the conservatory is, gets much heated, the water contained in the ground will evaporate, and being unable to escape will condense on the glass, as soon as the air gets cooler again, thus rendering the glass dull. This phenomenon is disagreeable only in so far, as it obstructs the view for a short time, as either, the moisture will accumulate so far as to run down the glass in drops, or as soon as the equilibrium of temperature in and out of the glass bell is returned, will evaporate from the glass again, and in both cases leave the glass as clear as before.

In case the plants should in the course of time grow so

large, as to come in contact with the glass, or to interfere with one another, they must be trimmed to their suitable size and form, and dead leaves or plants should be immediately removed. By lifting the covers frequently, it cannot be prevented that every time some of the moisture escapes, and thus in the course of time the ground be left dry, when it will be necessary to replace the moisture so lost.

The following is a list of plants adapted to this kind of cases, where there is but little ventilation :—

<i>Lycopodium cæsium</i> ,	<i>Lycopodium apodum</i> ,
<i>Lycopodium cæsium arbo-</i>	<i>Cissus discolor</i> ,
<i>reum</i> ,	<i>Maranta Zebrina</i> ,
<i>Lycopodium Wildenovi</i> ,	<i>Aphelandra Leopoldii</i> ,
<i>Lycopodium denticulata</i> ,	<i>Dracæna nobilis</i> ,
<i>Davallia pulchella</i> ,	<i>Begonias</i> , &c.

At another opportunity we shall give more particular directions in regard to the proper soil, the planting and general treatment of the Wardian Case, in its different forms.

Massachusetts Horticultural Society.

REPORT OF THE COMMITTEE ON FLOWERS FOR 1857.

BY E. S. RAND, JR., CHAIRMAN.

The past season has been singularly unfavorable for floriculture, and the weekly exhibitions of flowers have consequently been inferior to our hopes. The spring was very late, so that the hall was not opened till the third week in May. The opening exhibition was creditable in respect to specimen plants, but deficient as to general display.

The lateness of the season affected in a marked manner all the weekly shows. The tulip prizes were postponed several weeks, as at the time announced in the schedule the buds had scarcely begun to color. The roses were not in perfection until July, and all other flowers were later than usual.

The dahlia prizes were to have been awarded on the 3d of October, but a severe frost previous to that day cut off all the plants except in a few favored localities.

But in spite of all these discouragements, the displays have been most gratifying in the growth of specimen plants, and in the new and improved

varieties of flowers. No lack of zeal has been exhibited on the part of members and contributors to make the exhibitions in the floral department all we could wish; and the Society have reason to congratulate themselves on such good success under such disadvantageous circumstances.

The display of plants and flowers at the Annual Exhibition was better than usual, though in some respects inferior to former years. In floral designs there was a marked improvement. For the first time since the establishment of prizes for designs and decorations, the Committee did not have specimens of elaborately finished out-houses, monstrosities glaring with dahlias and marigolds, and thatched summer-houses, forced upon them. The designs exhibited were generally in good taste, though a lingering fondness for the huge and monstrous was apparent. The smaller designs were in keeping with the principles of floral decoration, and generally were ornamental and pretty.

The Committee must enter their decided protest against the use of flowers as glutenized ornaments of wooden, moss-covered crosses, anchors, eagles, and all that class of *so called floral* designs.

It is not a floral design (and none would be bold enough to call it a decoration) to mat our pretty forest mosses on a huge frame of wood or pasteboard; to sprinkle it with dahlias, amaranths, and marigolds; to fill or hang it with red and white phlox, and illuminate it with letters of yellow helichrysum! Name the abortion what you will,—a design, if you please,—but do not associate flowers in such a connection by calling it *floral*.

Too much latitude has been given in this class of ornaments, and the Committee would recommend to the Society the establishment of rules regulating the size of the designs exhibited; or else, what would be far better, the *entire discontinuance* of the premiums, and the institution, instead, of prizes for miniature specimens of floral or landscape gardening.

The display of cut flowers at the Annual Exhibition was superior to those of previous years, the varieties being more select, and the arrangement far more tasteful. The same may be said of the parlor bouquets presented for premium; for even those taking the lowest prize were superior to those receiving the highest premium in former years. The mantel bouquets were also well arranged and tasteful. But in hand bouquets much improvement might be made; and we trust our next Annual Exhibition may be more creditable in this respect. In large bouquets (as those made on frames were excluded from premium, as being rather decorations than bouquets,) some improvement was visible, though the committee cannot but consider these huge masses of coarse flowers as anything but ornamental.

The number of contributors of pot plants was smaller than on previous years, though the specimens and varieties were better. Fewer plants illy grown and branching were exhibited, and the general tendency was to render the growth elegant and symmetrical; yet, as usual, some few plants grown on the ladder or bean-pole principle found admission. Choice collections were exhibited by Messrs. Cushing, Wilder, Rand, Walker, Winship, Bowditch, and Hovey; also many very beautiful specimen plants.

A brief retrospect of the last season, as well as of the progress we have made in floriculture, may not be out of place or uninteresting.

The first exhibition was on Saturday, Jan. 10th, when a new and beautiful plant, *Styphelia tubiflora*, was presented by James McTear. It is of the *Epacris* tribe, and a most superior plant. It is difficult to propagate, but we hope soon to see it in every collection.

Jan. 24th, the *Spiraea Reevesiana* flore pleno and *Azalea amœna* were shown by Hovey & Co., both valuable plants.

Feb. 7th, a beautiful specimen of *Phaius grandiflora* from C. F. Jones. Though prize day for camellias, none were presented worthy of premium.

Feb. 14th, the prizes for greenhouse azaleas were also withheld, the time being fixed too early in the season. Specimens of *Eriostemon cuspidatum*, *Kennedia monophylla variegata*, and *Cytisus monosperma*, were shown by W. C. Strong; also fine *ericas* by Galvin & Hogan.

Feb. 21st, fine *ericas* and azaleas from Wm. Wales, and a beautiful specimen of *Eriostemon nerifolium* from James McTear.

March 7th, the new Orange *Rhododendron Javanicum* was shown by Galvin & Hogan. It is very beautiful, and said to be hardy. James McTear also exhibited a seedling camellia of very superior excellence, and a decided acquisition.

March 21st, Mr. McTear exhibited a fine specimen of *Phaius maculata*, and another seedling camellia of great merit. A fine plant of *Tropæolum tricolorum* came from Parker Barnes, and fine hyacinths from Curtis & Cobb.

From this time to the opening of the hall the exhibitions were very good, far better than usual at the season, and many new and rare greenhouse plants were exhibited. Among others, *Ericas* by James Murray, J. McTear, Wm. Wales, and Galvin & Hogan; *Calceolarias* by A. Bowditch; a fine new *Correa*, *Ne plus ultra*, by J. McTear; *Hyacinths* by Curtis & Cobb; fine *Orchids* by C. F. Jones; *Auriculas* by M. Trautman.

At the opening of the hall on the sixteenth of May, large collections of plants were exhibited. The *Fuchsias* of H. H. Hunnewell were most beautiful specimens, some of the plants being over five feet in height, and a perfect mass of bloom. They were by far the finest ever exhibited in the hall, and reflect great credit on Mr. Harris, by whom they were grown. The *Calceolarias* of F. Winship were very superior, both in marking and color. The displays of greenhouse plants were fine, and included many new and choice varieties. The collection of Thomas G. Whytal was very noticeable for new imported plants.

Late *Hyacinths*, this year, have shown no marks of improvement, though never below the standard. *Tulips* have been very inferior. *Pansies* have not been as good as on previous years. *Hawthorns* and *Hardy Azaleas* have been inferior, owing to the heavy rains of the spring. *Peonies*, both shrubby and herbaceous, though very late, have been good; and the same may be said of herbaceous plants in general. *Aquilegias*, *Pinks*, and *Spiræas* were a failure. *Roses* have suffered much from late rains and insects. *Summer* and *autumn Phloxes* have done well, and some superior

varieties have been raised and imported. Carnations and Picotees were not so good as on previous years. Rhododendrons bloomed well. Hollyhocks were very late, but showed decided improvement. Balsams and Petunias did well, but the exhibition was poor, owing to severe rains. Annuals have in general grown and bloomed poorly. Antirrhinums were a failure. Asters did well, but Stocks were inferior. Dahlias were better than usual, though early touched by the frost.

Verbenas have seldom grown or flowered so poorly, though a marked improvement is visible. Many fine varieties have been imported, and a few good seedlings raised. Among the latter we may mention Annie, a new white, raised by E. S. Rand, Jr., and which took the prize for the best new seedling. Thus far it has proved very superior, and, should longer trial confirm its excellence, it will be a valuable acquisition. A new blue, raised by T. G. Whytal, may prove fine; and a most curiously marked variety, raised by W. C. Strong, and named Yenadesse, is a decided novelty.

We subjoin a few remarks on the culture of the Verbena, together with a list of the best varieties in colors, kindly furnished us by Joseph Breck, a most successful cultivator:—

VERBENA.—There is no flower of modern introduction so indispensable for the flower garden as the verbenas. Ever-blooming, of the most vivid colors, embracing every tint of red, purple, blue, and white, it is the wonder of young florists how a flower garden, a quarter of a century since, could have been interesting without it.

The varieties are multiplying without end, flowering the first season from seed. The great difficulty now is to know which to select and which to reject, all are so beautiful.

Verbenas are important for three purposes, viz., for flowering in masses, for the border, and for pot culture. Some varieties are very beautiful when carefully cultivated in pots in the greenhouse, which when exposed to the sun will not stand its scorching influence in consequence of the flimsiness of the petals. Of this character was the white variety America, and many others that gave great promise before tested by the sun in the border. Others are very interesting in the borders, but quite unsuitable for a brilliant mass, as the new variety Imperatrice Elizabeth, which has small trusses of pretty flowers, white distinctly striped with purple; the foliage quite peculiar, being deeply cut and jagged; a prostrate creeper, but not strikingly showy. The verbenas for masses should be of robust habit, strong grower, throwing up a profusion of strong erect stems, bearing large, well-formed trusses of flowers, whose petals are of such consistency as to endure the most powerful sun.

For a scarlet we have not yet seen a better one than the old Defiance. This variety takes root readily, and, for rapid growth, long endurance, and brilliancy of color, has not been excelled. The new variety, Mrs. Woodroff, is similar to Scarlet Defiance, but has larger trusses of flowers; the color is precisely the same; and for a border flower preferable, and perhaps for a mass, but not in our experience. Lord Raglan is a fine scarlet variety, a shade darker than the two last, with a velvety crimson eye.

St. Marguerite is a fine old variety; color rosy carmine, with a violet eye. *Orb of Day* is darker than *Defiance*, inclining to a crimson; petals are not so regular as that variety, nor so firm, and not so good for a sunny exposure. *Charles* is a seedling of mine; color rosy scarlet, with a yellowish white and distinct eye; very pretty for borders. *Phenomenon*, brilliant scarlet; fine for borders. *Novelty*, (seedling,) a beautiful fancy variety; brilliant crimson, with a distinct white eye. *Wonderful*, (new last season;) superior; rich plum purple, with white centre; fine form, large truss, good habit, and very conspicuous. These two last have appeared to the best advantage when cultivated in pots, but they are indispensable for the border. *Isis* is a variety with crimson flowers.

Many of the white varieties are inclined to change to a pinkish hue, and therefore not so desirable for a mass of white as those that do not have this peculiarity. *Snowflake* is least objectionable on this account, but the trusses are not so fine, nor the flowers so large, as *Samoset*. The new variety, *Mrs. Holford*, has a still larger truss of pure white flowers, but not tested for a large mass, but probably is superior. Neither of these three varieties change very much, and are all suitable for this style of planting.

Mr. Rand's new seedling white, for which the Society's silver medal was awarded, promises well.

Of the blue varieties there is nothing that excels *Rand's Blue*, for bedding, in its class. It is very strong growing, throwing up an immense number of elongated trusses, or rather spikes of purplish blue flowers. A mass of this variety in the grass was one of the first objects to attract the eye of the visitor.

Hiawatha (*Hovey's*) is a strong growing and abundant blooming variety, with large trusses of brownish purple flowers; one of the darkest varieties, and a good one for bedding. *Purple Perfection* has a medium sized truss of rich purple flowers, and produces a good effect in a mass. *Madame Lemounier* is a fine fancy sort; flowers white, striped with crimson; but with me has not been prolific in flowers. *Striped Eclipse*—pink, with crimson stripes; a pretty fancy variety. *Sarah*—finely striped, white and lavender. *Dedham Belle* has a compact truss of clear rosy-pink flowers; one of the best for a mass of pink. *Jenny Lind*—flowers white, with purple centre; a fine fancy sort. *Etoile de Venus*—rosy pink; a superior variety, with very large trusses; flowers extra large. *Eva Corinne*—light pink, shaded with crimson; something like the last in its character. *Madame Gournay*—pink and white, shaded; a strong growing variety, suitable for bedding. *Phidias*—claret purple; a fine variety, but not a profuse bloomer.

I might enumerate many other varieties, in my own and other collections, which are prominent for their beauty, that do not occur to my mind now; but those named were the principal sorts in bloom in my garden at the time I received a visit from the Committee on Gardens.

Respectfully yours, JOS. BRECK.

Of specimen plants, the best have been exhibited by *James McTear*, *Hovey & Co.*, *E. S. Rand, Jr.*, and *Wm. Wales*.

The largest, most frequent, and best displays of cut flowers have been made by F. Winship, J. Breck & Son, A. Bowditch & Son, E. S. Rand, Jr. J. Murray, C. Copeland, and James Nugent.

Among new or rare plants we may mention—

Two seedling *Tropæolums*, named *Breckii* and *Randii*, have been exhibited by Joseph Breck, which may prove acquisitions.

Fine *Gladioli* have been shown by P. Barnes, the Messrs. Hovey, and James McTear.

New *Verbenas* by Parker Barnes and A. C. Bowditch.

Hedychium Gardnerianum gracilis, and *coronarium*, very beautiful, by E. S. Rand, Jr.

Choice new *Ericas* and *Phyllanthus latifolius*, by J. McTear.

Cympananthe suberosa by M. P. Wilder and E. S. Rand, Jr.

New *Gloxinias* by E. S. Rand, Jr.

Choice new imported *Achimenes* by Parker Barnes and E. S. Rand, Jr.

New imported *Dahlias* by Messrs. Hovey & Co. and Parker Barnes.

The Downing *camellia* by M. P. Wilder.

New *Verbenas*, *Petunias*, and *Pelargoniums* by Thos. G. Whytal.

Bransvigia Josephine by G. G. Hubbard.

Choice native plants from Cambridge Botanic Garden.

The Committee would also notice many newly imported plants and shrubs, with the result which has attended their cultivation during the past year.

Canna Warscewicsii, a decided acquisition both in foliage and flower. *Pleroma Benthamiana*, very beautiful in flower, growth curious. *Fuchsia Venus de Medici*; very fine and worthy of general cultivation. *Cuphea eminens*; perfectly worthless, rank in growth, and with no beauty in flower or foliage. *Petunia Countess of Ellesmere*; a decided acquisition and a superior bedding variety. *Petunia Imperialis*; very fine in some situations; on moist grounds the flowers are apt to be greenish; in dry, it is unsurpassed and should be extensively grown. *Wegeila amabilis* new and pretty, but by no means equal to *W. rosea*; its quality of flowering in the autumn renders it worthy of cultivation. *Geranium Duchess of Kent*, very good. *Geranium Lady Turner*, superior. *Delphinium cardinale*, not sufficiently tested; its color is a great acquisition. *Achimenes Ambrose Verschaffelt*, the most beautiful grown, flowers most delicately marked, white, veined with dark violet. *Achimenes rosea superba*, very beautiful. *Achimenes Parsonii*, pinkish purple shading to deep yellow, a decided novelty. *Phlox Henry Lierval*, a fine large purple; *Phlox Madame le Cerf*, the largest and best white; *Phlox Souvenir du 29 Octobre*, fine white with pink eye, very desirable; *Souvenir de ma mere*, a beautiful variety; *L'Orientale*, *Mad. Judith* and *Mons. Bondeevare*, also fine new varieties. *Delphinium Hendersoni*, very fine. *Geum coccinea*, a fine hardy plant. *Veronica Hendersonii*, the same apparently as *V. Andersoni*, and no improvement. *Potentilla Crimson King*, *Sudbury Gem*, *Shylock*, *Double Yellow*, and *Double Scarlet*, are all very fine, and must commend themselves to all cultivators of this most interesting plant.

In conclusion, the Committee cannot but feel gratified at the progress made during the past year, and hope that the future may be signalized by yet further improvement and greater zeal in the cause of floriculture.

The Committee would award the following prizes and gratuities:—

OPENING OF THE HALL.

PELARGONIUMS.—For the best six varieties in pots, to T. G. Whytal,	\$8 00
For the second best, to Hovey & Co.	6 00
FUCHSIAS.—For the best six varieties, in pots, to Thomas G. Whytal,	8 00
For the second best, to Jonathan French,	6 00
CALCEOLARIAS.—For the best six varieties, to F. Winship,	5 00
CINERARIAS.—For the best six varieties, to F. Winship,	3 00
For the second best, to Thomas G. Whytal,	2 00
GREENHOUSE PLANTS.—For the best display, of not less than ten pots, to M. P. Wilder,	15 00
For the second best, to Thomas G. Whytal,	10 00
CUT FLOWERS.—For the best display, to F. Winship,	6 00
For the second best, to J. Nugent,	5 00
For the third best, to J. Murray,	4 00

PRIZES AWARDED AT WEEKLY EXHIBITIONS DURING THE SEASON.

HYACINTHS.—For the best display, not less than ten varieties, to R. M. Copeland,	4 00
TULIPS.—For the best twenty distinct varieties, to J. S. Cabot,	5 00
For the second best, to Hovey & Co.,	4 00
PANSIES.—For the best twelve distinct varieties, in pots, to Parker Barnes,	6 00
HAWTHORNS.—For the best display, to F. Winship,	3 00
For the second best, to E. A. Story,	2 00
HARDY AZALEAS.—For the best display, to Hovey & Co.,	6 00
For the second best, to F. Winship,	4 00
For the third best, to M. P. Wilder,	3 00
SHRUBBY PÆONIES.—For the best six varieties, to M. P. Wilder,	5 00
For the second best, to J. Breck & Son,	4 00
For the third best, to Hovey & Co.,	3 00
HERBACEOUS PÆONIES.—For the best ten varieties, to Hovey & Co.,	5 00
For the second best, to M. P. Wilder,	4 00
For the third best, to J. Breck & Son,	3 00
AQUILEGIAS.—For the best display, not awarded,	5 00
For the second best, to Mrs. William Ashby,	3 00
For the third best, to F. Winship,	2 00
PINKS.—For the best six distinct varieties, to J. Breck & Son,	5 00
HERBACEOUS PLANTS.—For the best display, to Parker Barnes,	6 00
For the second best, to F. Winship,	4 00
For the third best, to Evers & Co.,	2 00
HARDY ROSES.—Class I.—For the best thirty distinct varieties, to J. Breck & Son,	8 00
For the second best, to Evers & Co.,	6 00

For the third best, to W. C. Strong,	\$4 00
For the fourth best, to Galvin & Hogan,	3 00
Class II.—For the best twenty distinct varieties, to Galvin & Hogan,	7 00
For the second best, to J. Nugent,	6 00
For the third best, to J. Breck & Son,	4 00
Class III.—For the best twelve distinct varieties, to Galvin & Hogan,	5 00
For the second best, to Parker Barnes,	3 00
For the third best, to Evers & Co.,	2 00
Class IV.— <i>Hardy Perpetual Roses</i> .—For the best ten varieties, to F. Winship,	5 00
For the second best, to Galvin & Hogan,	4 00
For the third best, to J. Breck & Son,	3 00
Class V.— <i>Climbing Roses</i> .—For the best display, not less than four varieties, to James Nugent,	5 00
For the second best, to J. B. Moore,	4 00
For the third best, to Hovey & Co.,	3 00
SPIREAS.—For the best display, now awarded,	3 00
For the second best, to Hovey & Co.	2 00
SUMMER PHLOXES.—For the best ten distinct varieties, to J. Breck & Son,	5 00
For the second best, to Hovey & Co.,	4 00
CARNATIONS AND PICOTEE PINKS.—For the best ten varieties, to Hovey & Co.,	5 00
For the second best, to Evers & Co.,	4 00
For the third best, to J. Hyde & Son,	3 00
HARDY RHODODENDRONS.—For the best display of the season, to Hovey & Co.,	6 00
DOUBLE BALSAMS.—For the best eight varieties, in spikes, not awarded,	4 00
For the second best, to J. Breck & Son,	3 00
For the third best, to J. Nugent,	2 00
PHLOXES.—For the best ten distinct varieties, to J. Breck & Son,	5 00
For the second best, to Hovey & Co.,	4 00
For the third best, to J. Nugent,	3 00
PETUNIAS.—For the best collection, to Barnes & Washburn,	4 00
For the second best, to J. Breck & Son,	3 00
For the third best, to F. Winship,	2 00
ANNUALS.—For the best display, to Barnes & Washburn,	6 00
For the second best, to J. Breck & Son,	4 00
For the third best, to J. Nugent,	3 00
GERMAN ASTERS.—For the best thirty flowers, not less than ten varieties, to Hovey & Co.,	5 00
For the second best, to Jonathan French,	4 00
For the third best, to Evers & Co.,	3 00
For the fourth best, to J. Breck & Son,	2 00

DAHLIAS.—For the best yellow, to Barnes & Washburn, . . .	\$1 00
For the best variegated, to Barnes & Washburn, . . .	1 00
For the best crimson, to J. Nugent, . . .	1 00
For the best very dark, to C. Copeland, . . .	1 00
For the best edged or tipped, to J. Nugent, . . .	1 00
Class II.—For the best twenty-four dissimilar blooms, not awarded, . . .	8 00
For the second best, to C. Copeland, . . .	5 00
Class III.—For the best eighteen dissimilar blooms, to C. Copeland, . . .	6 00
Class IV.—For the best six dissimilar blooms, to J. Nugent, . . .	5 00
For the second best, to C. Copeland, . . .	3 00
VERBENAS.—For the best collection, to A. Bowditch & Son, . . .	4 00
For the second best to J. Breck & Son, . . .	3 00
For the third best, to Barnes & Washburn, . . .	2 00
For the best new seedling, with foliage, to Edward S. Rand, jr., the Society's silver medal, for V. Rand's Annie.	

The premiums awarded at the annual exhibition will be found in our last volume, (XXIII. p. 473)

REPORT OF THE COMMITTEE ON VEGETABLES.

BY DANIEL T. OURTIS, CHAIRMAN.

Your Committee, in presenting their annual report, cannot but express their gratification at the continued interest manifested by the members of the Society in this department. Many gardens have been visited by them, in which every desirable variety of esculent vegetables was represented, in all the stages of luxuriant growth. Specimens of these have not always been found on the tables at the public exhibitions, owing principally to the great difficulty and expense of transportation. The contemplated change from weekly to monthly exhibitions will doubtless add additional stimulus to cultivators, and afford more time for the preparation and arrangement of their interesting and instructive collections. The generous competition fostered by such exhibitions will continue to add largely to the vegetable wealth of the community.

The interest manifested in the cultivation of the Chinese yam and Chinese sugar cane has extended over almost every portion of the United States. The former has proved productive in light warm soils, yielding tubers weighing from two to three pounds each, and from eighteen to twenty-four inches in length. We have seen fine tubers grown at Nantucket; and the splendid specimens exhibited in November last, by A. Andros, of Taunton, are fresh in the recollection of all. The mere profit of its cultivation is yet an open question, which cannot be decided until a more extended trial has furnished the data necessary for its solution.

Numerous reports from all sections of the country show that the varieties of the Chinese sugar cane, *Sorghum saccharatum*, are well adapted for our soils. Of its utility, as furnishing the source for the public and private manufacture of syrups, there can be no doubt; the researches of chemists

and microscopists prove that a kind of sugar closely allied to, if not identical with, *cane sugar*, may be obtained from it with ease in our southern States. The recent travels of Dr. Barth in Central Africa raise the question whether it may not be worth cultivating as a *grain*, independent of its saccharine qualities; the *Sorghum saccharatum*, the Negro millet, and a kind of maize, form nearly the whole food of many tribes, and are held in equal estimation by them. In districts where it arrives at maturity, it will doubtless add an important product for the food both of man and animals.

There were some squashes exhibited of such promising excellence that the Committee wish to say a few words concerning them. The Hubbard squash, exhibited by James J. H. Gregory of Marblehead, as a new variety, did not attract much attention, although the good qualities claimed for it led to an early trial of its merits. The size and form is about that of the original Marrow squash; its color is a dark dull green; its shell is very hard, similar to the sweet pumpkin introduced from the West Indies, and extensively cultivated on Cape Cod and Nantucket; the flesh is of a deep orange color, fine grained, and of a very sweet and fine flavor; it keeps well for a long time. We have tested it on our table since the exhibition, and can cordially recommend it as a most excellent variety, and worthy of extensive cultivation. The Sweet Potato squash, exhibited for several seasons by Francis Marsh of Dedham, is a fine table variety, keeping well till midsummer. This has a hard shell, of a light green color, somewhat ribbed; the form is oblong; the flesh clear yellow, very sweet, and well adapted for all culinary purposes. We think it merits a more extensive cultivation. The Cocoa squash, exhibited by Edward M. Richards, of Dedham, though new to the Committee, is believed to be of fine quality. It is considerably larger than the above varieties, oblong in form, and of a dark green color. We would recommend it for future trial.

In conclusion, we wish to insist on the importance of preserving the authentic names of every variety of seed sown in the kitchen garden. From the neglect of this precaution many errors have crept into the stores of the seedsman, and many mortifying failures have annoyed the cultivators. This may seem a matter of small importance to many, but we think it quite as important as the preservation of the names and grades of animals. In fruits, flowers, or vegetables, it is essential to their extensive cultivation that the names should invariably answer to their alleged excellent qualities; else the result will be confusion, dissatisfaction, and distrust of our best varieties.

Since closing this report, we have received a letter, more in detail, from Mr. Gregory, and append it to this report:—

MARBLEHEAD, MASS., Dec. 23d, 1857.

DANIEL T. CURTIS, *Chairman of Vegetable Com. of Mass. Hort. Soc.*

Dear Sir,—Of the origin of the Hubbard squash we have no certain knowledge. The facts relative to its cultivation, in Marblehead, are simply these. Upwards of twenty years ago, a single specimen was brought into town, the seed from which was planted in the garden of a lady, now deceased; a specimen from this yield was given to Capt. Knott Martin, of

this town, who raised it for family use a few years, when it was brought to our notice in the year 1842 or '43. We were first informed of its good qualities by Mrs. Elizabeth Hubbard, a very worthy lady, through whom we obtained seed from Capt. Martin. As the squash up to this time had no specific name to designate it from other varieties, my father termed it the "Hubbard Squash."

Up to the year 1855 the raising of this squash was confined to ourselves and a few neighbors, who raised little if any more than was sufficient to supply their respective families. I should, however, make the exception, that from the year 1847, I had occasionally, when travelling, taken a few seeds with me, and had distributed them among the farmers with whom I chanced to come in contact.

In the year 1855 a correspondent of the *New England Farmer* desired, through its columns, to have recommended to him a good winter squash. It occurred to me that here was an excellent opportunity to give a squash, which had given us such great satisfaction, a wider sphere of usefulness. I accordingly replied to the gentleman, enclosing seed of the Hubbard squash, and requested him, as a stranger to me and therefore presumptively an unbiassed judge of its merits, to make public the result of his experiment. In April of the following year he published the result of his planting in the columns of the *New England Farmer*, so highly eulogising its quality and keeping properties that it was at once brought into notice. Many applications now reached me for seed, and as it became necessary to give some name, I determined to make Hubbard, (which up to this date had been used as merely a convenient term,) its permanent name.

These are all the facts which are known relative to the history of the Hubbard squash, though it is possible that from a person not now accessible, I may be enabled to trace its history a step further.

In shape the Hubbard resembles the Marrow (or Boston squash, as it is called in some localities,) but it has rather more of a neck than the Marrow, and terminates more abruptly in a point, usually curved. In weight, it ranges from four to twenty-four pounds; but averages about the same as the Marrow, viz., from five to eight pounds. Its color is a dark green, with a dash of a dusty hue on the upper surface of the ripest specimens. There is also a hard shelled blue variety, which in quality, size, &c., is about on a par with the Hubbard, and we have considered it as equally desirable. The Hubbard has generally, when fully ripe, a thick shell, somewhat thicker than a cent, though some specimens, which have otherwise all the characteristics, are destitute of a shell.

The Hubbard squash, with the same care as the Marrow, keeps about three months later, being in its prime from November until March or April, and keeping into May. During the period we have cultivated it, the Hubbard has fully maintained its character, and is equally as good in quality now as in the years 1842 or '43. So strong is its individuality, that when so mixed and crossed with other squashes, that not a trace of it can be seen in the form or color of the cross, yet its quality will be so impressed on them that these squashes will almost uniformly be as fine grained, sweet

and dry as the pure Hubbard, though they will not keep and maintain their quality so late.

In all our experience we have never lost a crop or had it seriously affected from want of hardiness; though it is possible that the Hubbard is *slightly* more tender than the Marrow. To determine this will require a close comparison; but we have always considered it equally hardy as the Marrow.

Under high cultivation the Hubbard has yielded the past season, in one instance, 700 pounds of ripe squashes from 16 hills; and planted on a larger scale, nearly 5500 pounds of good market squashes on half an acre of land, equal to five and a half tons to the acre. Compared with the Marrow, the Hubbard will be found to be thicker meated, better flavored, (good specimens tasting much like a boiled chestnut,) finer grained, dryer and sweeter, besides being a better keeper; and from its thick shell less liable to be injured in handling.

Yours,

JAMES J. H. GREGORY.

The length of the Report prevents us from copying the list of prizes.

Horticultural Operations

FOR MARCH.

FRUIT DEPARTMENT.

The mild weather of January continued up to the 11th of February, when it changed to cold, with a cutting wind from the north, and the thermometer at 8°. Previous to this there had been scarcely any frost in the ground, and out-door work was performed with as much facility as in autumn. The sudden cold has put a stop to this for the present, though it will undoubtedly soon be mild again, as the season is too far advanced to expect much cool weather.

GRAPE VINES in greenhouses have been rather later in breaking than usual. This has been owing to the small amount of fire heat which has been required, from the mild weather: our vines, which the last two years broke the first of February, are just now (Feb. 15) swelling their buds. They should not therefore be pushed on too rapidly at first, or a weakened growth would be the result. Close the house rather early, and syringe freely in good weather, till all the buds have pushed. As they will grow all the more rapidly as the season advances, care should be taken to tie in the laterals in good season, and rub off all superfluous shoots. In graperies the same care will be required. Cold houses should be kept cool during the month, so as to prevent the vines from starting too early. Cuttings may now be placed in pots in the hot bed.

SCIONS of fruit trees may be cut all this month, and preserved as we have before stated.

GRAFTING should be commenced this month. Plums and cherries are sure to succeed better by beginning early. Root grafting may still be done.

PEACH TREES, in pots, now swelling their fruit, should have plenty of air, and continued moisture at the roots.

CURRENTS, GOOSEBERRIES, &c., should be pruned this month, as they break earlier than other fruit trees. Cut in the new growth freely if large fruit is wanted.

BLACKBERRIES may be pruned early, and the strong shoots tied up to stout stakes.

SEEDS of Pears, Apples, Cherries and other fruits, should be planted as early as the ground can be prepared. They vegetate much better than when delayed till warmer weather.

INSECTS should be looked after. The bark scale and bark louse, so injurious to apple and pear trees, should have immediate attention. Wash the trees once or twice with whale oil soap of the consistence of paint, or make a wash of potash in the proportion of 2 lbs. to 7 gallons of water. If the trees are badly infested, first scrape and wash them with sand and water. Where canker worms are troublesome, keep the trees well tarred or otherwise protected against them.

FLOWER DEPARTMENT.

As the days become longer, the sunshine stronger, and the cold less severe, the greenhouse and conservatory should present a more gay appearance. The Camellias will be nearly out of bloom, but other flowers will compensate for their loss, particularly the roses, where there is a good collection in pots, as there always should be. The Cinerarias, Calceolarias, Monthly Carnations, and the earliest Pelargonius will also contribute to the profusion of bloom during March. With the aid of good frames to receive many of the plants which have gone out of bloom a fine display may be kept up.

PELARGONIUMS will now be advancing rapidly, and the earliest potted plants will begin to bloom soon. Keep the whole stock in good growing condition by giving plenty of air and light, and rather sparing supplies of water. Tie out and regulate the shoots as they advance, and cut away superfluous leaves, which would crowd and weaken the plants. Plants for blooming in July may now be topped for the last time.

AZALEAS will now be flowering; give more liberal supplies of water. As soon as out of flower all straggling plants should be headed in, to make compact bushy specimens.

CINERARIAS, now making a stocky growth, should have a shift as soon as they fill the pots. If allowed to become pot-bound it throws them prematurely into bloom. Keep them in a cool airy situation.

CALCEOLARIAS will soon appear in all their beauty, especially the earlier plants. Water carefully, and fumigate if the green fly appears. Plants for late blooming should be repotted.

FUCHSIAS started into growth last month should now be repotted. Stop the shoots as they advance, and train the plants in a neat pyramidal form. Syringe often, and keep in a rather warm and close temperature.

CAMELIAS will now begin to make their growth. Such plants as need

it should be pruned in; and if the soil is sour, or in poor order, the plants should be repotted. Water liberally, and syringe every evening, while making their growth. Inarching may be now done.

GLOXINIAS AND ACHIMENES, started last month, should be potted off now, if not done before. If a hotbed is at hand they will come forward more rapidly than in the greenhouse.

LANTANAS, for early blooming, should now have a shift into larger pots, and a place in the hotbed for a short time, till they have made a good growth.

JAPAN LILIES, potted in January, will now have grown six or eight inches, and may have larger pots. Water more freely now.

HEATHS, EPACRISSES, &c., should have a final shift into the pots in which they are to stand all summer.

ANNUALS, raised from seeds, sown last month, should be potted off now. Fresh seeds may be sown for a succession.

BEDDING PLANTS of all kinds should be hardened off in cold frames, as soon as the weather will admit. Continue to propagate if the stock is not ample.

CHRYSANTHEMUMS may be propagated from cuttings this month; by commencing early very large and fine specimens may be obtained. Later in the season will answer for ordinary plants.

COLD FRAMES should have attention. Open freely in good weather, and cover up well in frosty nights. Pick off all dead and decaying leaves, and keep the whole stock in fine condition.

FLOWER GARDEN AND SHRUBBERY.

With the month of March the operations of the flower garden again commence. Sometimes it is so cool that but little can be done; but again it is so mild that much time may be saved by beginning early. Where there is ground to trench and prepare, such work may be accomplished even with a little frost in the ground. Roses and shrubs may be pruned. Lawns may be rolled, walks raked and put in order, borders partially cleaned, and a great deal done to render the grounds pleasant and inviting even at this early season. If warm, the bulb garden may be put in order by renewing the beds, clearing the walks, &c. The Crocus, Snowdrops, Daffodils, &c., will be in bloom, soon to be followed by the other and finer bulbs.

HYACINTH AND TULIP BEDS should be uncovered, leaving part of the covering near at hand to throw over them on the appearance of sudden frost.

HERBACEOUS PLANTS of all kinds may be safely uncovered the last of the month. When the season will admit, transplanting may be commenced at once.

DAISIES, PANSIES, &c., protected in frames, should be well aired, and allowed the benefit of warm rains.

HARDY ANNUALS, such as Rocket, Larkspurs, Candytufts, Clarkias, &c., may be sown in beds or patches in the border, where they are to remain to bloom.

HEDGES AND HEDGE PLANTS.

THE hedge dates from a very remote period. We read in the Bible of the "vineyard being hedged about." The garden of Alcinous, the Phæacian king, is said to have contained something less than four acres, "surrounded by a hedge;" and Homer relates that the old Laertes was "planting a hedge" when his son Ulysses returned from the Trojan war. It thus appears to have been a not unfrequent appendage to the gardens of antiquity. But to whatever extent it may have been planted at so early a date, it became a prominent object in Roman gardening. The villa Laurentina of Pliny was surrounded with hedges of Box or Rosemary, and the Tusculan garden was surrounded with evergreens sheared into various forms.

The Dutch, in their adoption of the Geometric style in its severest form, made extensive use of hedges, as every thing was reduced to the most artificial style; in addition to hedges, they sheared many of their trees, particularly the Box and Yew, into various fanciful shapes. The French gardeners were also famous for their sheared evergreens; and in the earlier English gardens they were common ornaments. But it was not till the introduction of the Natural or English style that the hedge, in its present distinctive character, came into general use: since then they have increased to such an extent that they have entirely changed the features of that country. All who have visited Great Britain need not be told how much they add to the landscape effect of every extensive view. The verdure of these enclosures is delightful, and their perfume has been celebrated by the poets:

———"How rich the gale;
Far off I scent the Hawthorn's bloom."

One would suppose, from a casual inspection of our suburban villas and even town gardens, that the most conspicuous ornaments that could be introduced are wooden fences of some sort. It is not uncommon to see, in very circumscribed

grounds, prominent whitewashed palings enclosing the front yard, the avenue, and the garden, separately, like so many pens upon a cattle-fair ground, as if the number augmented the beauty of the place! We can call to mind many such, and have often wondered why they have become such favorite objects, erected as they can only be at considerable expense. At the lowest calculation, we should judge that, in many instances, money enough has been spent upon these useless and unsightly structures to stock the closely-fenced-up garden, with scarcely a tree in it, with some of the finest fruits and shrubs. A fence is a necessary evil at the best, to be avoided as much as possible, and never introduced only upon the boundary for the protection and safety of the grounds: all besides this mar and disfigure the premises just in proportion to their conspicuousness and repetition. All division lines, even where protection from animals is necessary, may be accomplished by appropriate hedges.

Whether hedges will ever be introduced to the same extent they have been in Great Britain, is a question. The abundance of lumber and its cheapness, in this country, renders this doubtful; while the greater first cost of hedges, and the labor in managing them, adds to this doubt. In the great West, where timber is very scarce, this is a matter of some importance, though generally it is of no great consequence. But as ornaments to our country homes,—and it is to these that our remarks are directed,—the hedge should be every where introduced, that the offensive paling, which does not harmonize with any landscape, may be confined at least to its legitimate purpose of protection or privacy around an estate, and all dividing lines, for whatever purpose needed, be formed of some ornamental hedge. The effect of such lines of verdure upon the appearance of grounds, even of limited extent, need only be observed to be fully and universally appreciated. The entire aspect of our richest farms would be changed and beautified, could well-trimmed hedges be substituted for the zigzag rail fences and rude stone walls which now diversify and disfigure their surface. Even on the score of economy, it is argued by many that hedges should take the place of fences. Once properly set out and judi-

ciously managed, they are as perfect a barrier to animals as the rail fence, and last a life time with the slightest annual expense of clipping.

We should scarcely be believed if we were to state that, notwithstanding all that has been written about hedges and the ample directions for their management, few that deserve the name are to be seen. In all our experience we never yet saw a dozen good hedges, though we have noticed what were called such, hundreds of times. They are little more than vegetable screens, tall and thick at the top, and bare and leafless at the base: neither a tree nor a hedge; shutting out by their height some pleasant garden, while below they admit both bipeds and quadrupeds with perfect ease. Such are the majority of hedges raised by improper treatment while young, and too large when the neglect is discovered to be easily renovated.

As objects of shelter, aside from protection, hedges deserve introduction into and around all gardens wherever exposed to violent winds; and for the growth of many of the finer fruits and plants, for shade in summer and warmth in winter, they serve an invaluable purpose. The *Arbor Vitæ* is especially adapted to this end, serving, by its dense, evergreen foliage, as a screen from the hot suns of summer to many plants which will not thrive without it. They are better than a close fence or wall for this object, as they admit of a circulation of air, and at the same time effectually accomplish all the objects of the former. In the less sunny and cool climate of England, they are indispensable in the extensive nursery grounds and better gardens, where large and choice collections of plants and flowers are cultivated.

Having thus shown many of the advantages of hedges,—their importance in a landscape point of view,—their great value as screens, and, to a certain extent, their economy,—we proceed to give a brief account of the most approved and desirable hedge plants, with the soils best suited to each, and some hints in regard to the appropriate form in which they should be clipped.

When the hedge was first introduced into our country, it was thought that no other plant would answer the purpose

but the same one adopted in Great Britain, namely, the Hawthorn. It was therefore imported in quantities, and many old hedges still exist, though in most instances in a very dilapidated condition. Time, however, showed that though so beautiful and admirably fitted for the climate of the mother country, it was not at home with us. Our hot sun browned and burnt its pretty foliage, and that insidious foe, the borer, attacked and destroyed its roots. The best managed examples began to show ugly gaps, and, ere long, it became apparent that neither the associations connected with this favorite tree, nor the beauty and delightful fragrance of its snowy flowers, could save it from destruction. Here and there, in various parts of the country, some old homestead of the last century is still enclosed with the Hawthorn hedge; but they are destined, we fear, to eventually give way to its congeners the American Thorns, or the Buckthorn, and other plants.

THE AMERICAN THORNS.—As a substitute for the English Hawthorn, two of our American Thorns answer a very good purpose. They are both vigorous and hardy, retaining their foliage, and growing rapidly. The Cockspur or New Castle Thorn (*Cratægus crus galli*) is a most beautiful hedge plant, with an entire foliage, as green and glossy as the camellia. In Wilmington, Delaware, to which State it is indigenous, there are some of the finest specimens. We have also seen one in the grounds of D. F. Manice, Esq., Hempstead, L. I., which was a gem in its way; properly clipped, compact, and a perfectly protective barrier to all animals. The other is the Washington Thorn, (*C. cordata*), which, though more resembling the English than the Cockspur, makes an effective hedge, being well furnished with prominent thorns, very hardy, and retains its foliage well. These both deserve far more attention than they have hitherto received. We can only attribute their neglect to the scarcity of the plants, and a consequent resort to other and less beautiful kinds. If our nurserymen would but keep up as good a stock of these as they do of the Buckthorn, with such a specimen to look at as Mr. Manice's, we are sure they would speedily enclose hundreds of our neat suburban grounds. Both of them prefer a deep, rich, loamy soil, not subject to wet at any season of the year, but more particularly in winter.

THE BUCKTHORN, (*Rhamnus catharticus*.)—The ease with which this favorite hedge plant is raised, its perfect freedom from the attacks of all insects, and the certainty of its living, have contributed greatly to its popularity. As a protective hedge it is also very effective; it is deficient in thorns, though the lateral branches are armed with short stiff spurs, which render it quite formidable when thick and clipped in a proper manner. As an ornamental hedge it cannot compare with some other plants for the same object. It does not retain its foliage very late. It transplants with ease at almost any season of the year. The late Hon. John Lowell, who had some good specimens around his fine place at Roxbury, once informed us they were set out as late as the 20th of June, without the loss of a plant. Other good qualities are, that it bears clipping freely, resists any degree of cold, and will thrive in almost any soil not perfectly sodden.

THE PRIVET, (*Ligustrum vulgare*.)—Among the deciduous ornamental hedges this holds the first rank. It is indeed almost evergreen; pushing its small, lively green foliage early in the spring, and retaining it up to the very verge of winter, and often times beneath heavy snows until spring. Its growth is nearly upright, the branches diverging with great regularity, with a yellowish spray which adds to its attractiveness when denuded of its leaves. It grows with great facility, bears clipping as well as the Buckthorn, and, so far as our experience goes, is quite free from insects.

There are several varieties of the Privet, all very pretty, but that which appears the hardiest, and succeeds best, is the yellow-berried, so called, the berries of most of the others being black. As an ornamental hedge, next to evergreens, we repeat that this is the finest of all the hedge plants we have yet seen for our climate.

THE HORNBEAM, (*Carpinus betulus*.)—In England this is very extensively used for hedges and screens. The growth is very strong, and as it retains its desiccated foliage till spring, it affords a most excellent protection from cold winter winds, while its dry hanging leaves give it a warmer and more cheerful appearance. It is perfectly hardy, transplants very easily,

bears the shears with impunity, and may be kept low as readily as the Hawthorn. It thrives in almost any soil.

THE OSAGE ORANGE, (*Macluria aurantiaca*.)—If we were to judge from what has been said in favor of the Osage Orange this would rank at the head of all hedge plants. None will deny the superior beauty of its foliage, or the thorny character of its branches. As a tree it should be introduced into all plantations; but as a hedge plant, it should be planted with caution in all the Middle and Northern States where the thermometer sinks much below zero in winter. We have had some experience with it in the latitude of Boston, and are very well satisfied it will not answer here. The experiment was tried twenty years ago by J. P. Cushing, Esq., of Belmont Place, Watertown. He planted a hedge 500 feet long, and, after five or six years, rooted it out. It was managed in the best manner by his intelligent gardener, Mr. Haggerston, but every winter cut it up, till it became too unsightly to retain. As a tree it appears quite hardy, a specimen in the grounds of Mr. Kenrick, of Newton, having attained a large size and borne fruit.

The Osage Orange is naturally a large tree, attaining the height of thirty or forty feet: it is also a rapid grower. It is therefore impatient of the shears, and grows with such vigor and so late in the season, that the wood, after clipping, does not mature: consequently, when severe cold weather occurs, these shoots are killed back to the old wood, and, from the natural weakness of a plant too suddenly stripped of its wood, the root dies also. The winter of 1856-7 riddled many of the pet hedges of this tree in Illinois, and we observe that several planters from the northern part of that State pronounce it too tender for their climate. In the Southern States it may prove the best of all hedge plants, but until further experience shall settle the question of its entire hardiness more completely, it will be unsafe to try it with us. Nothing would give us more pleasure than to be able to recommend so fine a plant,—with a leaf as beautiful as the orange,—and we shall be glad to announce the first successful experiment with it. The remainder of our article we must reserve for another number.

HOME ARCHITECTURE.—No. II.

BY WILSON FLAGG.

ON THE NATURE OF ORNAMENT.

IN every building we recognize two classes of objects, its *features* and its *ornaments*. Its features are those adjuncts and appendages which are necessary to its identity, and without which it would be incomplete. Such, in the exterior of a dwelling-house, are the windows, the chimneys, the roof, the doors, the vestibules, and all other appendages added to it for purposes of convenience. In one sense these features may be regarded as ornaments, inasmuch as the beauty of a house depends chiefly on their form and arrangement; and in all cases they should be ornamental, so far as, without useless decoration, they can be made to produce an agreeable impression on the mind. But the features of a house are not to be treated as its ornaments, though it be admitted that they are its principal beauties. We know that the beauty of a human face springs from the form, size, disposition, and expression of its several features; yet its ornaments are certain things superadded to it, and which do not belong to it, as wreaths, ribbons, rouge and pearl, artificial ringlets and jewelry. Still, as the real beauty of a human face depends on its features alone, we may say the same of a house; and both the quantity and the character of the ornament placed upon the latter must be governed by its relation to other objects and by its situation in the landscape.

Ornaments are all such additions to a building as are designed to render it more agreeable to the eye or to the imagination, not including its necessary features; and they may be divided into two classes, those which are designed for relief, and those which are designed for embellishment. Of the first class, are simple mouldings, and all those additions that come under the general head of *finish*. Of the second class, are pinnacles, pendants, tracery, and columns and pilasters, so far as they are mere fanciful appendages and not needful in construction. All these objects in certain buildings may be properly employed whenever they will heighten their

legitimate effects; but in country houses, if not very judiciously and sparingly used, they injure instead of improving their desired expression. In the streets of a town or a city, ornamentation may be more liberally used, as buildings in those situations do not form a part of the landscape, and need not be made to harmonize with nature.

Let us turn our attention, in the first place, to the features of a dwelling-house, and consider the sources of their beauty and of their ornamental effects. It is evident that the keenness of the impression, made upon the mind by the appearance of a house, must depend greatly on the form and disposition of its features. Any awkwardness in their construction, or manifest defect in their proportions and their arrangement, would spoil the agreeable style of a dwelling-house, and render it ugly. The general habit of overlooking the distinction between the features and the ornaments of a building has led to an over-estimate of the importance of the latter. An ugly hut is selected, whose ugliness proceeds from its want of windows, of eaves, vestibules and other necessary appendages, and after improving it by the addition of these parts, it is put forth as an example of the pleasing effect of ornamentation, though not a single literal ornament has been added to it. It has indeed only been supplied with those features which belong to every complete dwelling-house, as eyes, nose and mouth belong to every perfect face.

A chimney is an important appendage to every dwelling-house and one of its most significant features, being the outward evidence of that indispensable adjunct to the interior—a fire-place. If any one should doubt its needfulness to the beauty of a house, let him deprive a cottage of its chimneys, and endeavor, by certain ornamental work, to make amends for the baldness occasioned by their absence. It may be objected that if we set up, on different parts of the roof, any projections resembling turrets or pinnacles, the baldness is relieved, and the cottage with these appendages is as pleasing as with chimneys. Only so far, I would reply, as such objects withdraw the attention of the passing observer from the absence of the chimneys, or as they may be mistaken for them. The pinnacles, in this case, are but counterfeits of one of the

necessary features of the cottage, and satisfy the observer, like a false window, in a place where the apparent absence of a window would indicate a serious defect.

But the reader may ask if an ornamented chimney is not more agreeable than a plain one? Under ordinary circumstances a plain one is to be preferred. All that is required to render a chimney pleasing to the eye is that it should bear a just proportion to the house, and correspond with it in the style of its workmanship. It should bear all those external marks which prove to a correct observer that it is properly constructed to answer its own ends. If it be supplied with ornaments, they should never be such as to disguise its true character, since the sight of smoke issuing from an object that does not seem to be a chimney, must affect the observer with a sensation of the ludicrous.

Windows are also a part of the essential features of a house, and whatsoever may be the style and elegance of their decoration, the real beauty of a window springs from its indication of a certain advantage—that of affording light and prospect to the inmates of the house. The *fenestration* of Gothic edifices was formerly considered one of the most important points of their decorative architecture. It is no less important to the beauty of a dwelling-house, and it must be adapted to give pleasure to the mind rather than to the eye, so that the outward arrangement may be most vividly demonstrative of light, prospect, and cheerfulness within.

I believe the attempt has never been made to disguise the character of a window, because it possesses considerable intrinsic beauty, and nothing disagreeable, like the smoke of a chimney, is associated with it. But it is difficult to determine what amount and style of ornament a window will admit, without losing that simplicity which should always characterize the features of a house in the country. The reader must bear in mind that I am treating of ornament as applied chiefly to country houses, and only casually of the architecture of the city and of public buildings. It will be admitted that there are some windows which affect the mind of the beholder with pleasure, and others with displeasure; but the former are not necessarily the most highly decorated; for a great

deal of the beauty of windows depends on their relative disposition, and their relation to the other features of the house.

The glass must be clear, the windows of a uniform size, and they must be symmetrically arranged. How plain soever the house, the window panes must be sufficiently large and prominent to be evidently well adapted to their purposes, and be ornamented with mouldings, to soften the lines of their connection with the walls of the house. Thus nature has fringed the eye with lashes, and defended it by the arch of the brow, which also, for relief, is pencilled with a semicircular growth of hair. If these appendages were wanting, the eye would stand out apparently without protection from a sudden influx of light. It would want relief. Hence those faces, which have no prominence of the eyebrow and no eyelashes, have a disagreeable staring look and cannot be beautiful. As the expression of the eye depends chiefly on its setting, in like manner the beauty of a window depends greatly on its framework, which, if ornamented at all, should receive a simple style of ornament that is suggestive of domestic happiness, and nothing at all that is ambitious. It ought to be an axiom in home architecture *that every ornament should make its appeal to the affections, and not in the least degree to the sentiment of admiration.*

Windows for ornamental purposes are constructed in various forms; but in a wooden building a rectangular window is the most simple and convenient, and therefore the most pleasing. Arched or pointed windows, under ordinary circumstances, would be considered finical and affected. A cottage having windows crowned with a curvilinear or pointed arch, would attract attention as a curiosity, and be admired for a season, as we admire a pretty vase for a mantel-piece; but our eyes would rest with more lasting satisfaction upon another with plain windows, neatly constructed, and of a convenient shape. The first would indicate unnecessary effort, because wooden structures do not easily admit of arches, and never require them. If the house were of brick or stone, an arched or lancet window would be a form which is adapted to the building materials. It is a good rule, however, to confine such ornamentation to public edifices, school-houses, churches, and

buildings in the city, in the style of which an appeal may very properly be made to the sentiment of admiration.

Doors and doorways may be treated as highly expressive of the pleasant accommodations of a house. They are indeed as important as windows to the character of a dwelling-house, and more suggestive of hospitality, or the opposite, than any other outward feature. A door, for example, that is wide and plain, with an easy door-step and an accommodating passage, seems to invite one to enter. A door, on the other hand, that is elevated considerably above the ground, profusely and expensively ornamented, with balustrades in similar style, seems to forbid entrance. Hence the hospitable expression of a dwelling-house on the one hand, and its selfish and exclusive expression on the other, depend greatly on the style of its doors and vestibules.

A portico or porch ought always to accompany a doorway, since it not only protects one, while standing outside and preparing to enter, but it is a pleasing object of sight, as indicative of this agreeable accommodation. It shades nothing which we desire to expose to the light, as a piazza shades and darkens the lower windows; hence it should be broad and ample, and may be considered an indispensable addition to a complete dwelling-house. A piazza is a continued porch, and though it is undoubtedly a great luxury, it darkens the windows, interferes with the prospect, and is attended with disadvantages that in many situations would overbalance the conveniences afforded by it. But it is so intimately associated with cheerful gatherings of a social circle on summer evenings, with twining roses and honeysuckles, with the balmy breezes from the field and garden, with a sunny promenade in cool weather and with grateful shade on sultry noon-days, that when neatly constructed and conveniently disposed, it must be a highly suggestive and ornamental feature of a dwelling-house. But a piazza should always be made of light and slender materials, that it may combine all possible advantages with the least amount of incumbrance.

The roof is one of the significant features of a dwelling-house in the country, and admits of being larger and steeper than in a house in the city or its suburbs. Mr. Ruskin rec-

ommends high, pitched, gable roofs for their effect on the mind, believing that a large roof is proportionally suggestive of hospitality, and the more steep the roof, the greater is its proportion to the remainder of the house. It will be generally admitted that a steep roof on country houses is rather more agreeable to the imagination than a flat roof, provided the height of two buildings thus compared is about the same from the foundation to the highest part of the roof. *What the roof gains in height must be taken from the height of the walls of the house,*—otherwise the whole structure presents an appearance of insecurity.

Our predecessors, it may be observed, who it seems to me paid more regard to the principles of art than is generally allowed, never put a steep roof on a high house, and seldom on one of two stories. When they placed a steep roof on a house of two stories, the building was always low studded and of great width. Many of these old-fashioned houses with high pitched roofs are very pleasing objects in the landscape, and their homeliness causes them to harmonize with the scenes of rude nature around them. When a steep roof is carried down to one story in the back part, it admits of two stories in front, without that appearance of too great height which it would otherwise present.

Our modern builders, who, in their zeal for making showy houses are apt to forget the true principles of home architecture, are sometimes guilty of placing steep roofs upon high buildings. But not even Fashion, though so nearly omnipotent in her influence over the vulgar mind, could reconcile the public to such structures, that look as if they might topple over in a high wind. Whatever there may be of pleasing association in a high roof, compared with others that are not so steep, it must be admitted that it ought not to be employed at the expense of interior convenience; and as houses at the present day are made with lofty rooms, they must, if built with more than one story, have proportionally flat roofs. If all the rooms of the house are made on one floor, they may be lofty and still admit of a steep roof. Dormer windows and gables are common features in houses of this plan of construction. Such dwelling-houses are generally considered

fanciful rather than economical, and in whatever light of superiority they may be viewed, when compared with the plain cottages in the country, which are in no style at all, the latter will always be regarded, by an unprejudiced mind, as the most sensible, and therefore the most pleasing, as objects in the landscape.

There is a wide difference in the principles upon which a public building and a private dwelling-house should be constructed. Let a dwelling-house, for example, be compared with a church. In the former, beside the common purposes of household convenience, we are to provide for that kind of appearance which will produce the most cheerfulness, tranquillity, and permanent satisfaction. Sufficient light must be admitted to render the interior of the house cheerful, and there must be conveniences for shutting out this light partially or wholly at times, as may be thought necessary. After all is completed, the house becomes a pleasing object of sight in proportion as its exterior plan manifests the presence of all these agreeable qualities within. It seems to me, therefore, that the artistical part of the science of home architecture comprises the rules for making both the external and internal physiognomy of a house vividly suggestive of its adaptedness to all the requirements of a happy and comfortable home. The mechanical part of the science is to make a house fit for its true purposes, and the artistical part to make its fitness visible and intelligible in its features.

In a church, after provision has been made for the accommodation of the assembly—secure and comfortable seats, a favorable construction of the room, both for easy speaking and convenient hearing, for the favorable situation of the choir, and the best conveyance of sound,—last of all, it is necessary that the style and arrangement of all the different parts, especially in the interior, should be *impressive*. Solemnity and grandeur are to be studied both in the construction and the ornamentation of a church, in order to heighten the effect of the religious services upon the minds of those who assemble there, by placing them in a tranquil and contemplative frame of mind, and inspiring them with a sensation of sublimity. All this may be accomplished without statuary, and

without a profusion of ornament. Indeed, a multiplicity of ornamental objects must impair these desired effects, by introducing a confusion of images into the mind, and diverting the attention of the worshipper from his own feelings and meditations. The mind would be distracted as in a museum—a place in which it is impossible to feel any deep or vivid emotion.

Amplitude, alleviated by certain partial divisions of space, produces a deeper influence on the mind, than unrelieved amplitude of space included within walls, without any such partial divisions. In this respect the Music Hall of this city is defective. Notwithstanding the great size of the room it is not impressive. It has no solemnity because it is too open or vacant. The brilliancy of the place in the evening, when fully illuminated, produces considerable mental exhilaration; but this is a frame of mind that diminishes one's susceptibility to be deeply impressed either by music or eloquence. The interior of a church, if it be very spacious, possesses a more solemnizing influence, if it be provided with galleries supported by arches, duly proportioned to the size of the room, than if the whole broad space be open and undivided, or than if the galleries are merely supported by pillars. We feel no security of mind in such an undivided hall. The wide vacant space is too staring and exciting to generate sensibility. Let it be relieved by arches supporting galleries, and forming several partial divisions of the room, and we feel the emotion of grandeur from its amplitude, and a soothing tranquillity from its solemn arches, that exercise the imagination, without diverting the mind from its own serious impressions.

Our protestant denominations are as ambitious to erect costly churches, and to make a display of wealth and glitter in their interiors, as the vainest Christian could desire. But when they are assembled in them, the devotional feelings which may accidentally be excited, are the effect of the services alone, and are produced in spite of the stimulating influence of the fashionable gear with which the church is embellished. While we carefully avoid the delusions of the Catholics, in matters of faith, we might learn many an instructive lesson of them in their church architecture, which

is studiously calculated to produce a humble, devotional, and solemn frame of mind. When we enter a genuine Catholic church, all the objects that meet the eye, however costly, are emblematical of Religion: the architecture, the carving, the painting, and other ornamentation, all seem to say, "This is the House of God. Be humble and kindly disposed one to another; for all men are equal in the sight of Heaven." When we enter a modern *model* Protestant church, all is emblematical of Fashion: the architecture, the glittering ornaments, the stylish furniture, all seem to say, "Behold our property! This church cost half a million; and five thousand dollars were paid for the choice of pews. Let the Police give notice that there is a house for the poor in another part of the city."

To return from this digression, I would remark that the style of a dwelling-house should be designed to awaken different feelings from those excited by church architecture. In the former we should avoid both grandeur and solemnity, and study to make the whole plan suggestive of homely qualities, and promotive of contentment and domestic happiness. It must be expressive of comfort; and to be comfortable, it must be spacious enough for accommodation, and not too spacious for convenience. The evidence of sufficient room is one circumstance that causes so many old-fashioned houses to be expressive of comfort, compared with modern ones. They cover a great amount of surface. We feel that we might occupy them and not be confined to an inconveniently narrow space. We perceive that the members of a large family might assemble round the fireside with a party of friends, without incommoding each other. An important part of the beauty of a dwelling-house comes from the outward manifestation of these interior advantages.

But a house may be spread over a great deal of space, while it may be so planned as to seem contracted and deficient in room. The arrangement of the windows, doors, vestibules, and other appurtenances, may indicate an excessive number of apartments. If the house be disproportionally high it will seem to be deficient in breadth, though no such deficiency exists. If the stories be very low, the apparent amplitude is

greater than the real amplitude. Hence the height of the house, if it be disproportionally great, ought to be concealed by art.

Lofty rooms are more agreeable and more favorable to health, but low rooms cause the house to seem, to an outward observer, more spacious and comfortable. We increase the pleasant and homely aspect of the house, not only by making it spread over a considerable extent of ground, but if it be disproportionally high, by any artifice that conceals its apparent height. There is also a moral sentiment connected with low-studded houses, and such as appear so—arising from an expression of humility—which is a more important feature than the proud, and those that imitate them, are able to understand.

The apparent adaptation of a dwelling-house to the purposes of luxury may be supposed to render it more pleasing. This may be very important in the eyes of one who was brought up in the midst of wealth, luxury, and ease; and it is, after all, but the expression of a superior amount of comfort, and of a higher order of conveniences and accommodations. But to the majority of minds the evidences of luxury seem identical with those of pride and effeminacy. Hence as soon as a house expresses, in addition to all that is desirable for comfort and convenience, an adaptedness to the morbid wants of slothfulness and vanity, it ceases to be homely. It loses its repose, and expresses the feverish desires of an effeminate and an ill-regulated ambition.

THE BOTANICAL AND HORTICULTURAL LITERATURE OF THE OLDEN TIMES, WITH REMARKS ON THE SPECIES AND SORTS.

BY JOHN L. RUSSELL, PROF. BOT., ETC., TO MASS. HORT. SOCIETY, &c., &c.

PART III.

HAVING given an idea of the style and treatment of the Flora of New England, as it presented itself to JOSSELYN's eye in 1665 or thereabouts, I shall continue, in this article,

the subject in a more discursive mode, not confining myself to the order of the narrative, but selecting such more singularly curious instances as are to be found in it.

And, after being attracted by the Fungi, such as *Fusse Balls* (*Lycoperdon*), some of which grow "very large," to the "Mushrooms, some long, others jagged, flat, round, none like our great Mushrooms in *England*; of these some are of a scarlet colour, others of a deep yellow;"—in the sparse mention of which our author did not exhibit much discrimination, especially if he ever wandered away in our woods of an autumnal morning, where he would have found almost every seeming representative of both "the great Mushrooms in *England*" and the smaller ones beside—we are presented with *Hepatica triloba* in his "Noble Liverwort, one sort with white flowers, the other with Blew."

From this early harbinger of spring we step, in the narrative, to midsummer fruits, and are presented with the "*Blackberry*," *Rubus villosus*, mistaken for *Rubus fruticosus* (compare *English Botany*, plate 715); with the *Dew Berry*, *Rubus canadensis* instead of *Rubus cæsius* (*Engl. Bot.* 826); with the *Raspberry*, here called *Mulberry* (*Rubus hispidus*), still called *Mulberry* in some parts of New England, and eaten only by children and perhaps by birds. The *Rubus Idæus* is the *Raspberry* of *England*, while *Rubus strigosus*, *Mx.*, is our raspberry, a fine flavored fruit.

Next our dish of "New England's Rarities" is filled with "*Gooseberries* of a deep red colour," where we have, instead of *Ribes Uva crispa* of Europe, our *Ribes hirtellum*.

Wonderful properties in way of eating we find in "*Hawthorn*, the Haws being as big as Services" (*Pyrus domestica*) "and very good to eat and not so astringent as the Haws." The English Haws are fruits of *Cratægus oxyantha*, naturalized, as it is supposed, here, and found in our pastures at this day; but I imagine that our author found, in his remarkable Haws, not our native *Cratægi*, but our June berries (*Ame-lanchier botrydium* and *canadensis*), whose sweetish berries are quite palatable.

That tedious though handsome weed, "Toadflax," (*Linaria vulgaris*,) seems to have been known even at this time.

"*Juniper*; it is here very dwarfish and shrubby, growing for the most part by the Seaside." This marked characteristic of our *Juniperus virginianus* at that early day, conclusively shows how the present aspect of our seacoast rocky pastures is identical with the time of the settlement of the country; and that the deeper forests were more inland or among the lower portions of the shores,—such as narrow valleys between the hills,—indeed, in this respect New England has little changed in its stern and barren features.

Nuts may be classed among the fruits; let us see what JOSSELYN "Gent." can furnish us in this line. He lays before us "*Hazel*," our species, for the *Corylus avellana*; "Filberd both with hairy husks upon the nuts and setting hollow from the Nut and filled with a kind of water of an astringent taste." Here we have a repetition, more at length, of the previous mention of the Hazel, in which we find our *Corylus americana* and *C. rostrata* mistaken for *Corylus avellana* of the cultivated kinds in England, having larger fruits. The mention of the astringent water would seem trivial were it not consonant with a treatise of a chyrurgical character; indeed, we are told that it ("the water") is very "good for sore Mouths and falling of the Pallat, as is the whole green Nut before it comes to the Kernel burnt and pulverized; the Kernels are seldom without Maggots in them;" doubtless the progenitors of our *Rynchæ'nus nasicus* according to SAY, the American entomologist. Then we are favored with "two figures of the Walnut," but which are so unfortunate as to suggest to me our pignut (*Carya glabra*), and certainly giving one but a very poor notion of our "New England's Rarities Discovered:" and of which the narrative well says, that the "Nuts differ much from ours in Europe—all of them but thinly replenished with Kernels," but by way of compensation we have "*Chestnuts* very sweet and may be (as they usually are) eaten raw; the Indians sell them to the English for twelve pence the bushel." These famous chestnuts are our native variety of *Castanea vésca*, which are smaller and "sweeter" nuts than those of the European type.

But may not our mouths water at the following descriptions of the "*Plumb Tree*, several Kinds, bearing some long, round,

white, yellow, red and black Plums all differing in their *fruit* from those of England." I must confess that such "a dainty" array of plums looks rather formidable, at first sight. We learn, however, from English botanists, that the common plum tree of England is the *Prunus domestica*, and is there found in hedges; while the Bullace plum (*P. institia*) is the other British kind. The first named has been considered only a variety of *Prunus spinosa* or *Sloe*, but whether this be so or not, all the fine varieties of garden plums have originated from the *Prunus domestica*.

What JOSSELYN found as New England's Rarities, representing the English plum tree, I think must have been the Canada plum (*Prunus americana*), which bears the "some long," and are yellow, orange or red; the beach plum (*Prunus maritima*) which bears the "round," and which varies from purple with a glaucous hue to crimson; but what the "black" and the "white" are, I am at a loss to conjecture, unless *Prunus insitia* were really indigenous to this country, and was then noticed by the author; the fruits of this species are black and also "white" in color, and likewise "round" in their shape.

The rocky hills about Lynn and Salem are annually rendered gorgeous with *Genista tinctoria*, on whose presence in Essex County a myth has been erected, maintained and credited, that the plant was introduced from England by the early settlers as a material for dyeing. But JOSSELYN, at Scarborough, in 1663, or thereabouts, tells us of "*Woodwax* where-with they dye many colours," as if it were familiar to our native Flora in his time.

Reverting to fruits he presents us with "*Red and black Currants*." The black currant is our *Ribes flóridum*, resembling *Ribes nigrum* of Europe. His red currant may be *Ribes prostratum* or *Fetid Currant* of our cold damp woods, of which I believe a not very delicate mention is made in his "*Voyages to New England*," reprinted in the *Collections of the Massachusetts Historical Society*, Third Series, Vol. III. It is, however, asserted that *Ribes rubrum*, or the veritable red currant, has been found in the cold woods and bogs of North America, and if it really came under the author's notice and observation, it would add materially to the strengthening of this statement.

We arrive now at the Second Section of the Treatise, which is thus styled:—

“II. OF SUCH PLANTS AS ARE PROPER TO THE COUNTRY.

Indian Wheat, of which there are three sorts, yellow, red and blew.” This Indian Wheat is no other than our Indian Corn (*Zea Mays*.) He informs us that the “Blew is commonly ripe before the other a month. Five or six grains of *Indian Wheat* hath produced in one year six hundred.” This “blew” variety was probably a Canadian sort cultivated by the Indians and brought here by the traffic between the different tribes. The yield seems very little to us; but we should remember, that the soil was unmanured and the size of the ears of such a variety are quite short and small.

We are presented in our *Lilium canadense* with our author’s “Mountain Lillies bearing many yellow flowers turning up their Leaves like the Martagon or Turk’s Cap, spotted with small spots as deep as Saffron.” And a fine plant it is, and readily cultivated, a good counterpart with our native superb lily, which does not seem to have met the writer’s eye.

What plant the Indians made use of in lieu of “*Tobacco*, which is not much Planted in New England,” can only be surmised at best. He says that it was of “a small kind with short round leaves called Pooke.” *Lobelia inflata* has been called Indian tobacco, and I am informed that *Gnaphalium religinosum* or low cudweed is sometimes employed by juveniles to smoke—a custom, it may be, derived from aboriginal manners. We learn, that this same Pooke was very odious to the English, and a pity ’tis that the veritable tobacco has not shared the same fate with them and their descendants.

In our cold wet meadows, the *Sarracenia purpurea* grows abundantly, and is an attractive object when met with by novitiates in botanical pursuits. It is not singular that it should have been noticed by JOSSELYN, who not only describes it very well, but gives a very correct figure of the plant. But he styles it the “*Hollow Leaved Lavender*,” and tells us that it “grows in the Salt Marshes overgrown with Moss, with one straight stalk about the bigness of an Oat Straw, better than a cubit high; upon the Top

standeth one fantastical Flower ; the Leaves grow close from the Root, in the shape like a Tankard, hollow, tough, and always full of water ; the Root is made up of many small strings growing only in the Moss, and not in the Earth ; the whole Plant comes to its perfection in *August*, and then it has Leaves, Stalks and Flowers as red as Blood, excepting the Flower, which has some yellow admixt. I wonder where the knowledge of this Plant has slept all this while—i. e. above forty years.”

To this sagacious inquiry I can only add that it might be feared such knowledge of the Hollow Leaved Lavender would have slept many forty years longer, were it sought for in “salt marshes.” I am puzzled to know how several plants are thus located in salt marshes, unless it might be at the head of inlets on the coast, in whose rear the cedar swamps or low wet places with cold springy spots were to be found. Such a junction of the sea with the inland forest growth seems at one time of geological formation to have been possible, and may exist even now. It is certain that no mosses, favorable to the growth of moss-loving plants, ever grow upon salt marshes: and it is possible that the word “salt” is an interpolation in the print.

I consider the name of Lavender to originate in the pitcher-shaped foliage, as if from *lavo*, Latin, to wash: and although the blossoms suggest the present trivial name of sidesaddle flowers, yet the plant is sometimes, now, called Forefathers’ Cups, and, better still, Frogs’ Pitchers.

This charming bog plant deserves more than a passing notice. Some roots, collected in December last, have preserved their freshness of foliage, and have even made new leaves, planted in moss saturated with water, and kept in a deep dish on my parlor table. They attract every person’s attention who enters the room, and suggest the possibility of raising finer blooming specimens in artificial culture than can even be found in their wild habitats. I think that they would thrive well in wet moss, and covered with a tall bell-glass, similar to the treatment of *Lycopodium arboreum*, *cæsium*, and the like. In PARKINSON’S Herbal there is also a curious figure of the plant, which seems to have been unknown to the

author of *New England's Rarities Discovered*, when he put his sapient question.

Let us hear something in the chirurgical line.

"*Maiden Hair*, or *Capellus veneris verus*, which ordinarily is half a yard in length. The *Apothecaries* for shame now will substitute *Wall Rue* no more for *Maiden Hair*, since it grows in abundance in *New England*, from whence they may have good store." This New England herb is none other than *Adiantum pedatum*, our most elegant of ferns, and distinct from the *Adiantum Capillus Venèris* of Great Britain. The Wall Rue substituted fraudulently for the better kind is *Arnèsium Rùta Murària*, which, from its disposition to insinuate itself into the mortar of brick walls, also among the chinks of the stones of ruins and churches, and from the form of its frond, has obtained the appropriate name of Wall Rue. The same fern is not uncommon in limestone regions of the United States, as I have frequently gathered it, for instance, in the limestone formations of Vermont, near Winooski Falls.

Some attention to the supposed medical virtues of the True Maiden Hair will account for the indignation and zeal of our author. Newman, in his elegant "*History of British Ferns*," says, that we are told by Bulliard in his work on the Medicinal Plants of France, that it is known in the shops under the name of *Capillaire de Montpellier*, but no mention is made of its use as an ingredient of the syrup called *Capillaire*, though the author adds, that it is frequently used in medicine. According to *Flore Française* (III., 549) it is used in the South of France to make a syrup, which being perfumed with orange flowers is called *Capillaire*. In Arran, according to Dr. Ball, the inhabitants use a decoction of it instead of tea. Ray, in his *History of Plants* (I., 147,) gives a very detailed account of its wonderful virtues, and gives it too with all the gravity of implicit faith. His catalogue of diseases curable by preparations of this fern, seems to include nearly all "the ills that flesh is heir to." And one Dr. Peter Formeus of his day regarded it as an *universal panacea*. The great want of precision in the earlier works of Botany caused several ferns to be confused under a similar title;

and accordingly *Asplénium trichomànes* and *Asps. Rùta Murària* were, with it, called, in England, *Maiden Hair*. Herbs of rarest supposable virtues have been proved since those earlier times, but fictitious in merit, and even the most famous have fallen into disuse. Dr. Lindsay (*Phytol.*, IV., 1064) remarks on its astringency, and its recommendation, at one time, for pulmonary complaints. Like most ferns it contains taurine and gallic acids.

“*Indian Beans*, falsely called French Beans, are better for Physick and Chyrurgery than are Garden beans. *Probatum est.*” This is a curious mention of the presence and use of our bush beans, *Phaseolus vulgàris*, called *Haricots* or French beans in some of our Seed Catalogues nowadays. It has been suspected that the *Phaseolus* was known among the Aborigines, and used with the maize, and that the several varieties are all of tropical American origin. The Garden Beans, incidentally alluded to, and as inferior in Physick, are what are termed by seedsmen Windsor Beans, the *Fàba vésca* or *Vicia fàba*. Connected with those Indian esculents we find too among the “Rarities,” “*Squashes*, but more truly Squanter squashes, a kind of melon or rather Gourd, for they oftentimes degenerate into Gourds, some of these are green, some yellow, some longish like a Gourd, others round like an Apple, all of them are pleasant food, boiled and buttered and seasoned like spice, but the yellow squash called the Apple squash because like an Apple, and about the bignesse of a Pomewater is the best Kind: they are much eaten by the Indians and the English.”

Here we have a Catalogue of Indian Vegetables worthy of considerable note. The *Squanta* Squash defies even conjecture, unless we read *Squater* or *Squatty* Squash, alluding to the scalloped *Summer squashes* (or Gourds) so called. Gourds and pumpkins, both in edible varieties, appear to have been well known to the Indians: and probably what is now cultivated for its mere beauty in the Orange Gourd (and sometimes eaten) is the Apple Squash, of the size of the Pomewater. We learn from a Glossary to Shakspeare that *Pommè water* was a well known kind of apple: such a name, I am told, still applies to a variety of apple. The orange

gourd is ordinarily of the size of an apple, and is thus signified, perchance. But better than gourds we find "*Water Mellon*; it is a large fruit, but nothing near so big as a Pompion, smoother and of a sad Grass green Colour, or more rightly *Sap green*, with some yellowness admixt when ripe: the seeds are black, the flesh or pulpe exceedingly juicy."

New England had "Bill Berries, two kinds Black and Skye colored, which is more frequent, a most excellent Summer Dish," in our present Whortleberries (*Vaccinium resinosum*) and blue berries (*Vacc. corymbosum*), and the "Knot Berry or Clowde Berry, seldom ripe," (perhaps *Rubus hispidus*;) and the "Wild Cherry, they grow in Clusters like Grapes of the same bignesse, blackness, red when ripe, and of a harsh taste," in which we notice *Prunus virginiana*, or commonly called Choke Cherry. Adding a little horticultural hint to other observations, our author assures us that "transplanted and manured they grow exceedingly fair."

He calls the Cranberry (*Oxycoccus macrocarpus*) "Bear berry, because Bears use much to feed upon them—a small trayling Plant, that grows in [Salt] Marshes that are overgrown with Moss; the tender Branches (which are reddish) run out in great length, lying flat on the ground, where at distances they take Root, overspreading sometimes half an Acre; sometimes in small patches of about a Rood or the like: the Leaves are like Box, but greener, thick and glistening: the Blossoms are very like the Flowers of our *English Night Shade*, after which succeed the Berries, hanging by long, small footstalks, no bigger than a Hair; at first they are of a pale Yellow Colour; afterwards Red and as big as a Cherry; some perfectly round, others oval; all of them hollow, of a Sower astringent taste; they are ripe in *August* and *September*: used for Sauces to allay Feavers, and are good against Scurvey."

A better description of our cranberry could hardly have been devised, than in this early mention of the plant.

HISTORY OF FRUIT TREES AND FRUITS.—No. III.

BY LEANDER WETHERELL.

THE APPLE TREE—SOIL AND LOCATION.

HAVING sketched somewhat briefly the history and great antiquity of the apple, it is now proposed to consider the location and soil best adapted for planting an orchard. Before doing this, however, allusion should be made to an omission relative to the early history of the apple, in relation to both England and America. Mr. Hogg, in his excellent work on the Apple, is of the conviction that it was known to the Britons long before the invasion of the Romans. This he deems evident from their language. "In Celtic, the apple is called *abhall* or *abhal*; in Welsh, *aval*; in Armoric, *afall* and *avall*; in Cornish, *aval* and *avel*, derived from the pure Celtic word, *ball*, signifying any round body. The ancient Glastonbury was called by the Britons *ynys avallac*, *ynys avallon*, which signifies an apple orchard: and from this its Roman name *avallonia* was derived." This being admitted, there can be little doubt that the apple was known in England before the political conquest of the Romans. It is certified before the Norman Conquest, by William of Malmesbury, that "King Edgar lay down under the shade of a wild apple-tree, in 978." Pope Alexander III., in 1175, in his bull confirming the property belonging to the monastery of Winchcombe, in Gloucestershire, mentions, in the town of Twining, "with the lands, *orchards*, meadows, &c." In a charter of King John, granting property to the priory of Lanthony, near Gloucester, is mentioned "the Church of Herdesley, with twelve acres of land, *and an orchard*."

Now all this may be true, and not militate materially against the claim set up, that apples were introduced into Britain from Rome. It is well known to every student of ecclesiastical history, that it is maintained by ancient writers, and believed by some modern ones, that the gospel was preached to the inhabitants of the island of Britain in the days of the apostles. In those days of missionary labor, as now, the priesthood carried with them the arts and fruits of

civilization, wherever they proclaimed and published the gospel. The spiritual conquest by Rome having occurred long before the political one, it is therefore not improbable, that the cultivated apple was introduced into England about the time of the Christian Era. This would account for all the aforesaid historical statements concerning apple-trees and orchards.

Wm. Coxe, a celebrated American author, in his rare and excellent work on Fruit Trees, remarks: "Whether the numerous varieties of apples with which our country abounds have proceeded from the dissemination of the seeds brought here by our European ancestors, or were produced by apples cultivated by the aborigines before the discovery of America by the Europeans, is a question about which writers have differed, and will continue to differ. My own impressions are favorable to the former, as founded on that principle of the vegetable kingdom, that varieties are limited in their duration; and authorizes the belief that none of the Indian orchards, discovered in America, are more ancient than the first settlement of the Europeans on this Continent." Provided it be admitted that cultivated apples and orchards were known in America before Christopher Columbus sailed hither, it would not confirm the notion of their being indigenous. For it is claimed that this Continent was known to the East long ages before Columbus studied geography, or made a voyage of discovery. If so, then it would not be an improbable supposition that these ancient voyagers, hither, from the East, might have brought with them the seeds of the cultivated fruits. This, however, is one of those questions that nothing short of direct testimony can settle, and that, probably, is beyond the reach of human investigation.

Hogg, already quoted, remarks, that "the apple tree has existed in Britain as indigenous throughout all ages, and that the most ancient varieties were variations of the original species which abounded in the forests." This remark will apply with equal force to all other countries, where the apple is cultivated; and yet fail to prove that the best cultivated varieties of the apple are indigenous either in Europe or America. The earliest record of the vegetable kingdom of

which man has any knowledge contains these words: "Let the earth bring forth grass, yielding *seed*, and the *fruit-tree* yielding *fruit* after his kind, whose *seed* is in itself; and the earth brought forth grass yielding *seed* after his kind, and the tree yielding *fruit*, whose *seed* was in itself after his kind." The query has arisen, and been elaborately discussed by learned writers, whether seeds or plants were first created. The quotation cited would seem to favor the latter. The history of man, also, seems to confirm this view. But as it is no part of the present design to discuss this point, it has been alluded to, for the purpose of indicating, that it is probable that the apples that supplied the table of the first human pair were not inferior to those produced by the best horticulturist within ten miles of Boston. This is one way of accounting for the possession of fine fruits by man. The other is, that they have been cultivated up, as already indicated, from the crab-tree, *Pyrus málus* of Linnæus, *Málus communis* of D. Candolle, or *Pyrus coronària* of Tournefort, *Pyrus rivulàris* of a modern botanist.

Notwithstanding the almost universal cultivation of the apple in the temperate zone, it will be generally admitted that location and soil affect both quantity and quality. It was maintained by Coxe, "that the Middle States are most favorable to the production of fine table apples and cider. It will probably be found that the river Mohawk on the north, and river James on the south, form the limits of that district of country which produces apples of the due degree of richness and flavor for both purposes. It will not be denied, that apples grow well in the interior and elevated parts of the Southern States, as well as in favorable exposures in the Northern and Eastern. Most of the fine varieties have been produced within these limits. Handsome and fair apples are grown in Maine and Nova Scotia, but they do not possess the fine flavor of the apples of the Middle States. The same is true of apples produced on the plains of Georgia and the hills of St. Domingo. Cold and heat are equally necessary to the production of fine apples,—neither predominating in too great a degree."

Knight, in his Treatise on the Fruits of Hereford, says:

"The flavor of the cider, for which particular orchards in that county in England are celebrated, is ascribed to their warm and favorable exposure, in every instance coming to his knowledge." Chancellor Livingston, an author of great reputation, remarked, "that the growth of trees in America compared with England was as five to three." "This fact," says Coxe, "may account for the revival of the reputation of several English cider apples, transplanted to this country."

Gerard, in his Herbal, speaketh as follows, of soil and location: "The tame and grafted Apple trees are planted and set in gardens and orchards made for that purpose; they delight to grow in good and fertile grounds: Kent doth abound with apples of most sorts. But I haue seene in the pastures and hedge-rows about the grounds of a worshipful gentleman, dwelling two miles from Hereford, called Master *Roger Bodnome*, so many trees of all sorts, that the seruants drinke for the most part no other drinke but that which is made of apples; the quantity is such, that by the report of the Gentleman himselfe, the Parson hath for tithe many hogshead of Syder. The hogs are fed with the fallings of them, which are so many, that they make choise of those apples they do eat, who will not taste of any but of the best. An example doubtless to be followed by Gentlemen that haue land and liuing; (but enuie saith, the poore will break down our hedges, and we shall haue the least part of the fruit) but forward in the name of God, graffe, set, plant and nourish vp trees in euery corner of your grounds, the labor is small, the cost is nothing, the commoditie is great, your selues shall haue plenty, the poore shall haue somewhat in time of want to relieue their necessitie and God shall reward your mindes and diligence."

Don says: "A difference of opinion appears to have always prevailed respecting the quality of the soil proper for fruit-trees. Some prefer very rich and other very poor. Both are wrong. The advocates for the poor soil appear to have been misled by transferring the feelings of animals to plants, and inferring that a change from want to abundance must be agreeable and beneficial to both. But plants in a very poor soil become stunted and unhealthy, and do not readily acquire

habits of vigorous growth when removed from it. In a soil which has been highly manured, the growth of young apple trees is extremely rapid, and their appearance during two or three years, generally indicates the utmost exuberance of health and vigor. These are, however, the forerunners of disease, and the 'canker's desolating tooth' blasts the hopes of the planter. In choosing the situation for a nursery or orchard, too much shelter or exposure should be equally avoided, and a soil nearly similar to that in which the trees are to grow should be selected for the nursery. Pasture ground or ornamental mowing should be preferred to old tillage, and a loam of moderate strength and of considerable depth to all other soils."

Hogg, in his *Introduction to British Pomology*, remarks: "The apple may be grown on almost any description of soil, provided it is not absolutely wet. It succeeds best in a humid sandy loam, or a well-drained, strong clay, with a calcareous, or gravelly subsoil. It is not necessary it should be of great depth, as for pears, as the apple, having no tap-root, does not penetrate far into the soil. From a foot and a half to two feet will be found of sufficient depth; where the soil is good and the subsoil humid and not wet, a foot in depth answers a good purpose."

Rogers, in his *Fruit Cultivator*, says: "The size and flavor of the fruit, the health and duration of the trees, are the result most commonly of good or bad soil. Climate and location also affect both trees and fruit, but not in the degree that they are affected by the qualities of the soil. Of all soils, the hazel loam, containing a small portion of sand, seems the most congenial to the apple. In such soil it flourishes longest, is most productive, and remains freest from disease and insects." Like Hogg, he urges the importance of underdraining wet soils.

McIntosh says: "Deep-rooted soils in sheltered situations are not the best for the apple, though most often recommended; the tree succeeds well in almost any loam, provided it has not a wet subsoil; the roots take an extensive horizontal range, and in such soils the wood ripens better than when the roots strike deep." And the quality of the fruit, he might

have have added, is very delicate to the taste, and will keep longer.

Downing says: "Strong loams and clayey loams are the best adapted to the growth of fruits." Concerning aspect or location, he says: "We have seen fine fruit trees in all locations. The best and most favorable aspect, however, is a gentle slope to the south-west, because, when in bloom, the trees are protected from the bad effects of the morning sun after spring frosts. Some even prefer a northern slope, as being more sure to escape the effects of frost. Deep valleys, with small streams of water, are deemed the worst locations for fruit trees, in consequence of the liability to frosts. If the stream be large, like the Connecticut or the Hudson, the liability is less, because of fog, which gradually melts the frost, or prevents it."

Soil and location, or aspect, are subjects, as now contemplated, worthy of deliberate consideration with those desirous of planting apple orchards, for very much will depend upon these, whether such are successful in growing that species of fruit, which is, really, of more importance for the market and family use, than all other kinds. With a favorable aspect, good soil, and trees from a suitable nursery, the gardener and farmer cannot fail of success, in their efforts to cultivate the apple.

SULPHUR FOR INSECTS.

BY EBEN. WIGHT, COR. SEC. MASS. HORTICULTURAL SOCIETY.

The following appeared in the Country Gentleman of February 20, 1858:—

"SULPHUR FOR INSECTS.—I find by the Cultivator that you have no faith that sulphur has any effect on insects or blight, when put into a hole in the trunk of the tree. The Mockernut Hickory on this place, (Mr. Manice's estate) were dying very fast, the cause being an insect eating the buds in the spring and early summer months. About four years ago my employer, Mr. Manice, had holes bored with an augur in the trunk of the tree, to the pith, and then filled with sulphur and the hole stopped up. Since that was done we have lost but few trees. I had no faith in it at the time my employer did it, but such are the results. * * * * * How it

acts I cannot tell. You know vegetable physiology is yet imperfectly understood.—RICHARD PARNELL, *Queens, N. Y.*"

The above is much the same as we meet with periodically going the rounds of newspapers. Agricultural editors are generally too well posted in such matters to believe that sulphur could have the *least* possible effect for the destruction of the curculio, canker worm, or any other insect, when applied as above recommended. As to its remedial qualities, it possesses none whatever; it is *no* remedy in the destruction of any insect as above proposed, for the reason that the sulphur will remain the same *in quality and quantity*; no diminution of quantity takes place, for all capillary communication is cut off and *ever* remains so as long as the tree continues to stand.

Now for FACTS, showing the fallacy of boring and plugging with sulphur. About twenty-five years ago, an article went the rounds of the newspapers, saying, the Shakers had tried the experiment of sulphur, and had entirely extirpated the canker worm, and saved their trees in pristine freshness. The communication stated, that, so sudden was (?) the effect, that in less than twenty-four hours scarce a vestige of the myriads was left; each had let himself down in "double-quick time" by a ladder of his own construction, (of course they do; sulphur or no sulphur, all leaving the tree at about the same time to take on the chrysalis state); neighbors gathered to see the way in which young Mount Vesuvius was stirring up the inhabitants of the upper regions. The above was a *stirring* affair in more ways than one; my neighbors read the account, and forthwith set to work on their fruit and ornamental trees; sulphur was in demand, with an upward tendency, (not by the aid of sap, however,) and results were looked for. Many a fruit tree was cared for, which was more than could have been said for any prior time since the first dibbling of them into holes as their last resting place. Some said, "sulphur was the thing;" others had *known* quicksilver to keep off caterpillars, so long as any was left remaining in the hole; in other words, till the sap vessels had used up the charge first put into the auger hole.

Determined to show the *absurdity* of such a mode of proceeding, I too set to work with both sulphur and quicksilver, care-

fully weighing the quicksilver in a balance distinctly sensible to the hundredth part of a grain. The holes were bored and cleared so that I might thereafter remove it without trouble, as it all laid in one globule—the holes were cemented over. These holes were opened from year to year, and the quicksilver taken out and weighed, showing no decrease from first to last. These facts I gave you, as you will notice on reference to your Magazine, Vol. XIX., p. 152. Amongst my trees selected for trial of sulphur, were two venerable elms. The auger used was of the size of the rolls of sulphur, and was allowed to penetrate to the very heart of the ancient specimens. Roll after roll of sulphur was put in and the holes plugged—one with grafting clay, the other a wooden plug. The one on which grafting clay was used soon healed over, while the other showed signs of bleeding for a length of time. This was over twenty-five years since.

Now, *mark the result.* This winter these two trees were cut down, one having been struck and killed by lightning, its mate on the opposite side must also share its fate for harmony's sake, and so give place to others planted some thirty years since, with the view of making up the deficiency.

On cutting up the butts, it was found that sulphur and hole were of the same size as when operated on twenty-five years ago. The holes had grown over and that was the only change observable. The better to illustrate such folly, I send you a piece of the same, that you may have it to show to others. A like piece I shall place in the hands of Chas. L. Flint, Esq., Secretary of the Mass. State Board of Agriculture, State House, Boston; and still another will be sent to Col. B. P. Johnson, Corresponding Secretary N. Y. State Agricultural Society, Albany, N. Y.

CRANBERRY CULTURE.

BY F. TROWBRIDGE, NEW HAVEN, CONN.

THE interest you take as well as the public in the culture of the cranberry, induces me to give you some few hints upon its culture. Within a few years, in consequence of the high

prices that have been obtained for the fruit, and the constantly increasing demand, more attention has been directed to its growth, and many persons have made large plantations of the vines. It is therefore desirable that all the information that can be obtained in regard to their management should be given to the public, that success may attend their efforts in so laudable an object. The cranberry, like every other fruit, needs care and attention. For I have found that in almost all cases where a failure has occurred, it has been owing to inattention to the proper preparation of the soil, or to keeping them clear and free from weeds after having been planted.

There are large quantities of land all over our country that will grow large crops of fruit, that are now comparatively worthless,—too wet and cold for grass. Other localities, that would produce grass, but the subsoil is quite wet throughout the year, ten or twelve inches below the surface,—where also good crops of corn or other grains would flourish. The preparation of the ground of the latter description will not be so great as the former. If such soil is of a rather light nature, a plough can be used and the ground thoroughly prepared; after which the plants can be set out. If the lot is extensive, it is better to plant the vines two feet or more apart, so as to cultivate between them, which always needs to be done, in order to keep out the weeds for two or three years, after which the vines will cover the ground and mostly take care of themselves; often yielding, after two years, from one hundred and fifty to two hundred and fifty bushels per acre. Where small lots are planted out, they would cover the ground much sooner by placing the vines only one foot apart. If the soil is heavy, three or four inches of sand (sea sand is best) should be carted on to the surface and the whole made level. The plants should in all cases be set four or five inches below the surface of the soil, as they take root from the stem; they can safely be set deeper than many other plants, and as they thrive mostly on air and water, the deeper they are set out, the most likely they are to live. The vines may be planted out as late as June.

In regard to land that is wet and spongy, it should be drained, and the surplus water left about ten or twelve inches

below the surface. The ground can then be trenched, and the more thoroughly it is prepared the more successful will be the culture. Sand should be covered over the ground to the depth of three or four inches, in order to keep the surface loose, and to prevent foul grass and weeds from choking the plants, and it is much easier to keep them clean afterwards.

As to flowing the land, which has been thought indispensable to success, it is not necessary ; but where it can be done without inconvenience or great expense, it will tend to keep the plants back until the late frosts are over, which often destroy the crop ; it will also aid them sometimes during the summer droughts, at the time the berries are forming. Still it is not absolutely necessary, and that is a question of some importance to know.

There are some other points in the culture of this valuable berry which I might suggest, but I have already, I trust, said enough to induce all who have spare land to attempt their cultivation, which will prove a remunerative crop.



7. LARGE OVAL CRANBERRY.

We are pleased to present our readers with the above brief directions upon cranberry culture. Mr. Trowbridge has been indefatigable in his endeavors to awaken an interest in the culture of this fruit, now one of great commercial importance, and we see no reason why thousands of acres of the land lying waste everywhere, may not be appropriated to its growth. No doubt, through the experiment of raising seedlings, much

improvement might be made in the size of the berries. There are now only two recognized sorts, one the Bell, and the other the large Round, common on Cape Cod. The former seems to be the favorite with cultivators, though both are good. We trust Mr. Trowbridge's article will create a renewed interest in cranberry culture, not only on an extensive scale, but also by our amateurs, in their gardens, for the supply of their own tables, where they can have the fruit fresh and plump from the vines. Our cut (FIG. 7) represents the large oval variety.

POMOLOGICAL GOSSIP.

LADY DOWNE'S SEEDLING GRAPE.—A new variety, recently introduced under this name, is now attracting much attention among English grape-growers, and is pronounced "one of the best, if not the very best, grape in cultivation for late purposes." Like many new fruits, it was long cultivated without its character being known beyond the collection where it was raised, but from its great merit it at last attracted the notice of grape-growers, and, through the good judgment of Messrs. Backhouse of York, was brought before the public. We append such an account of it as we gather from several notices in the *Gardeners' Chronicle*:—

It is a late grape; the bunches are long and compact, the berries are rather oval and black, the flavor is sweet, but, like all grapes that hang late, the skin is rather thick; it is a good bearer and sets well. A correspondent who visited Lady Downe's place and saw the vine in bearing, states that the "bunches were ripe early in September, and considering that they were in a house where plants were wintered, and consequently where fire heat was kept during the whole of the time of the severe weather, the berries were, notwithstanding, very little shrivelled on the 8th of March, when he saw them. These facts show it to be one of the best, if not the very best, grape in cultivation for late purposes." Its history is thus given by the raiser:—

Lady Downe's Black Seedling grape was raised from the

Black Morocco, crossed by the Chasselas or Sweetwater, 23 years ago, and was sent to Messrs. Backhouse, of York, eight years ago. The bunch of grapes it was raised from, Lady Downe had for her lunch, and after eating the grapes she sent to the gardens for a pot of mould to sow the seed in; after the plants were up and the seed leaves were expanded, they were handed over to Mr. Foster, one of the gardeners, to take charge of them. Two plants were raised, one a white grape, and this variety; both were planted out and produced very fine grapes.

Mr. Thompson, gardener to the Duke of Buccleugh, states that it sets freely, bears abundantly, showing three bunches to an eye, ripens in the greenhouse, hangs late, and is likely to prove one of the best keeping grapes in cultivation; Messrs. Backhouse consider it the most valuable keeping grape in cultivation; and Dr. Lindley adds, that "it is certainly a very nice grape."

From all these testimonials, and many others which we have not room to quote, it appears one of the most valuable of the new grapes recently introduced, equalling the Barbarossa in long keeping, and far surpassing it in all other qualities, especially productiveness.

EASTERN APPLES IN THE WEST.—In our notice of the meeting of the Ohio Pomological Society in our last number, (p. 105), we gave the summary account of the Secretary in regard to "what had been learned," and in this summary we were somewhat surprised to see that he came to the conclusion, from the evidence, that the Eastern varieties of winter apples best adapted for cultivation in Southern Ohio, "are not those generally known and approved in Northern Ohio and in New York, but varieties of Western origin." We did not wish to make any greater claim for our favorite Eastern sorts than they really possess, and therefore made no comment upon the statement. It gives us great pleasure, therefore, to offer the evidence of a skilful cultivator of Maysville, Ky., somewhat further south, who informs the *Country Gentleman* that "Western nurserymen and fruit-growers have been too hasty in denouncing promiscuously Eastern apples," and that Mr. G. Hamlong of Germantown, in that State, tells him

"that out of 200 varieties which he has tested, most of them of western and southern origin, he has not been able to discover any equal to such apples as Esopus Spitzemberg, West-field Seek-no-further, Swaar and Baldwin in their season." (!) Such sorts as Rome Beauty, Smith's, Milam, Rawle's Janet, &c., are very valuable as market fruits, being very productive, large and showy; but it will not do to bring them to the table on the same day as the Swaar, Spitzemberg, &c." This we believe to be the fact.

NEW THEORY OF THE BLACK KNOT.—A writer upon plums in the *Country Gentleman* affirms that the "black knot excrescence is not attributable to the attack of an insect, but is a *scrofulous* habit peculiar to plum trees, producing dark-colored fruits—hereditary and contagious. It is perpetuated by seed from unhealthy and affected trees, and by scions impregnated with the inspissated sap. The difficulty then is the feculent condition of the sap. Various specifics have been applied without affording any relief. The most successful remedy prescribed has been realized in the tonic properties of *sulphate of iron*. It will, in an ill-conditioned tree, immediately produce a deep green foliage and a general healthful appearance. Cutting away the affected branches is imperatively demanded, as the disease spreads rapidly." We are induced to think that even the *specific* of sulphate of iron has been as much *vaunted* as any one, and certainly applied with as little success. We believe the knife, applied in season, is the only remedy, as we know it has proved efficacious in more than one instance. The *scrofula* of the plum is an ingenious theory. The same writer states that the curculio is "migratory and gregarious." We think our plum cultivators are already aware of it, and have found him all this, and even "more so."

CARPENTER'S SEEDLING PEACH.—We are pleased to learn that Mr. W. S. Carpenter of New York will soon introduce his new peach to cultivators, having placed the stock in the hands of a nurseryman for propagation. Specimens of the peaches shown at the exhibitions of the American Pomological and other societies were universally admired for their size, beauty and excellence. It is one of the latest white-fleshed peaches.

HOW TO TRAIN THE BLACKBERRY.

BY THE EDITOR.

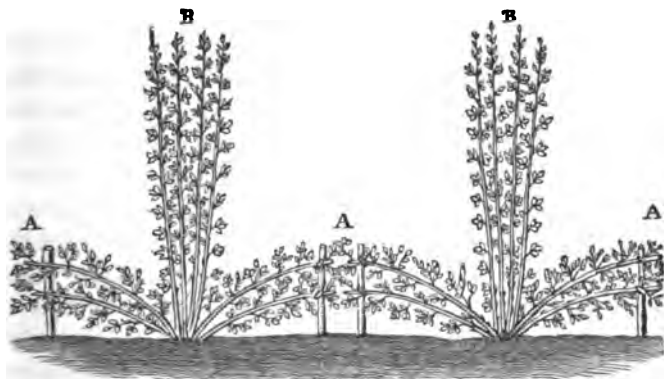
THE blackberry is rapidly and deservedly becoming one of the most popular and favorite fruits. Coming in immediately after the other small fruits are gone, and in eating for more than six weeks, it fills a place before vacant, and, by the superior excellence of such sorts as the Dorchester and Lawton, supplies the dessert with an abundance of the richest fruit till frost.

Everybody who ever gathered the wild fruit in our woods and fields, knows what a thorny and unmanageable bush the blackberry is,—that it will often scarcely pay to tear one's hands and feet to get at some great bush laden with its tempting clusters of fruit. It is indeed a formidable object, and not any less so in the new sorts than in our wild varieties. Unless the plants are trained in some way to be easily accessible, it will be almost impossible to gather the fruit without the risk of scratched hands and arms.

The ordinary plan is to train the plants to upright stakes, but in this way the new wood runs up among the fruit, and renders the picking troublesome; besides, the strong canes do not break so well, nor bear so abundantly, or produce such fine berries. Horizontal training is the best. Some cultivators train to a trellis; but, for various reasons, this is objectionable. The best way is to train the old bearing wood horizontally to stakes, and to allow the young wood to occupy the space in the centre, as the raspberry is trained in Holland, of which we annex a plan (FIG. 8.)

The plants should be set out eight or ten feet apart. When they have attained sufficient strength to throw up four vigorous shoots, these should be cut in to four or five feet, and trained in the spring to stout stakes (A A), about four feet long, set firmly in the ground. Their horizontal position causes every eye to break, and produce an abundance of fruit. During the season the new growth, or bearing wood for the next year (B B), occupies the centre, and in no way interferes with the gathering of the berries. If the canes grow too tall and

hang over from their weight, the tops may be pinched off at the height of five or six feet, by which means they become stronger. Only four shoots should be allowed to grow annually, all the others being cut away or dug up.



8. HORIZONTAL PLAN OF TRAINING THE BLACKBERRY.

The advantages of this mode over others is, that the stout stakes retain their place, and facilitate the gathering without danger of tearing the hands, and do not have the unsightly appearance of tall stakes or a trellis. Neatly done, a row of vines, loaded with their black and glossy fruit, is rather an ornament to the garden. Raspberries may be trained in the same manner.

THE PANSY.

BY M. A.

"A wise man maketh more opportunities than he finds."

It need hardly be remarked, that no plant has more rapidly risen from a comparatively worthless state to occupy a prominent position in the florist calendar than this hybrid violet.

Little did I dream in my childhood ignorance, a quarter of a century ago, that amongst the cullings of the verdant meadows and flowery banks of other climes, this tiny fellow would expand under the loving and patient industry of the hybridist into a thousand diversified forms of exquisite excellence.

And why not? Is there any plant that affords a greater stimulus to the young florist, or more charms and soothes the old one? Its very playful and capricious nature conveys a fine moral lesson; it leads the young to habits of patient improvement, and shows the old there is yet a higher path to tread ere perfection be attained.

One of the most charming writers that ever adorned the English language has said, "the world may be likened to one vast mansion, where man has been admitted to enjoy, to admire, and to be grateful." To the contemplative lover of nature how thrilling the sentence; the soul vibrates with thought, and memory bridges over the gulf that separates the present from the past, and we bound away to other days, when, free from the festering cares of the world, we luxuriate in the home of our rural life, and its associations has left its impress on our minds, which not even the dry details of a city life, amongst the sons of business, or the monotonous nature of a life of physical toil, can crush from the soul. Hence it is that the enthusiast struggles under difficulties, and produces results that startles the lukewarm and fashionable cultivator.

For a large section of your readers, the willing votaries of Flora, ardent admirers of the pure and beautiful, the undecided as to what flower shall be the pet, since all are charming, are these remarks intended, and with a hint not to forget the old proverb at the head of this article, I will initiate them into the "mysteries of the order" by first telling them what are the chief properties that constitute a good flower, according to the standard taste of the present day, and second, its cultivation.

Form is point the first, and most essential, and includes not only shape but smoothness of margin and perfect flatness of petals, and so disposed as to form a perfect circle, and, in fact, when the lower and two upper petals are removed, the two side petals will, in first-class flowers, meet at the upper and lower parts; for the petals to meet well above the eye is of the utmost importance, thus making the form "of the shield" complete. A disposition to bloom flat is also desirable, and the contrast between a rough, uneven, frilled flower, and

one which, without artificial means, will dispose of its petals evenly and smoothly, exhibiting its rotundity in all its perfection, will momentarily fix the attention and catch the eye of the veriest tyro in the fancy. Sawtoothing is another defect, and sometimes occurs in flowers otherwise unexceptionable, and although it is minute, it tells against it when brought in contact with perfection. Indentation of the lower lip often occurs in otherwise good flowers, and destroys its rotundity, which is absolutely essential.

Point the second is substance of petal. Whatever may be the excellence of form, if the flower be flimsy and weak, its beauty is destroyed. To be justly appreciated, the petals should be thick and velvety, thereby enabling the flower to stand well. On point third there has always been much diversity of opinion, viz., harmony, or a proper distribution of color, but the best qualified judges of Europe hold it absolutely essential that the three bottom petals agree in shade, whatever be the color of the upper ones; and, in selfs, it is necessary that they all should assimilate. No flower, with the ground color stained, can be admitted as first class, as it is as great a defect in the pansy as the discolored bottom to the cup of a tulip. Whether it be a white, yellow, or any other colored self, it must be pure and steadfast, and the eye large and well defined, and the more it contrasts with the body color the better. If the color be black, crimson, maroon or purple, the eye must be white or yellow, but no shading off. In belted flowers, or those with a margin of color encircling the three bottom petals, it ought to be of a uniform width throughout, and in a perfect flower of this class no triangular spot is seen. Size is the least of all the essential requisites to a good flower, but in either a single or a collection of flowers, acknowledged judges determine, by the following rules, to *form*, *four* points; *substance*, *three*; *distribution or harmony*, *two*, and *size*, *one*.

All plants intended for exhibition purposes should be restricted to size of pot, and if the plant be clean and well bloomed, must be an object of pleasure to the many, as the proud *one*—the owner.

Of its cultivation much might be said, the substance of

which would be—young plants, rich mould and a regular degree of moisture; or, to vary it, a regular degree of moisture, rich mould and young plants—but to those about to commence its culture, I would briefly hint—they will require a three-light frame, a few dozen well selected plants, a cart-load of good loam, some rotten leaf-mould, sand, and thoroughly rotten cow or horse manure, some few dozen small pots to keep the plants over the winter for planting out in the spring, and a few 6 or 8-inch pots for blooming the plants in the frame or for exhibition purposes.

Commence to prepare, as soon as the ground and weather permit, a bed; for aspect avoid, if possible, the full glare of the sun; if the soil be naturally *poor, wet, sodden, heavy* or *sandy*, counteract all these evils by striking the medium; plant one foot apart and six inches from the edge of the bed; give a good watering after planting, and stir the surface often with a Dutch hoe. Its effects will soon be apparent. If the weather continue dry, be sure to pay a ready visit with water-pot in the evening, applying it with a fine rose, not merely wetting the *surface*, but *thoroughly*. Thus exhausted nature is reinvigorated, to meet to-morrow's dawn.

The beauty of the first bed will be over by July; if necessary to replant, young plants should be prepared in the interval from cuttings,—or, by dividing the old plants and adding manure, a fine bloom may be obtained in the autumn. But a good substitute may be found in a few choicely selected verbenas, or other bedding plants, thus giving the amateur ample time to prepare a fine batch of plants for the coming year.

The pansy suffers very little from frost, but at the same time they should be well protected in very severe weather.

I omitted to say that the plants intended for pot culture should receive their final shift in January, and in April the frame should be reversed from south to north, thus avoiding the full glare of the sun, which is very important. A brick should also be placed under each corner, so as to obtain a current of air around the plants. By raising the back rows on an inverted pot, so as to correspond with the angle of the frame, they form a fine bank, and if the selection is good and

the plants well bloomed, tell me what genus gives a greater variety of colors, more gorgeous hues, or affords more ecstatic delight than Heartsease.

FLORICULTURAL NOTICES.

NEW VERBENAS.—The new verbenas of the present year promise to be fine additions to this beautiful and popular flower. We have seen but few of them in bloom, but as they are seedlings of the most successful raisers in England and France, they will undoubtedly prove fine. The following are the names:—

Attraction, (Edmonds,) Celestial, (E.,) Charles Dickens, (E.,) Dred, (E.,) Edward, (Chauvière), Geant de Betailles, (C.,) Le Gondolier, King of Roses, Lord Palmerston, (E.,) Monarch, (E.,) Mad. Abdt, Noel, Prince of Wales, (E.,) Rosy Gem, (E.,) Sir Joseph Paxton, (E.,) Tranby and John Edwards.

The only American seedling we have seen of remarkable quality, is **RAND'S ANNIE**, which is the Gem of the Whites. The truss is beautifully shaped, forming a full half circle, the pips large and well shaped, the color pure, and the habit strong and vigorous. It is a most superior flower.

NEW BEDDING GERANIUMS.—Great improvement has been made in the scarlet and various colored bedding geraniums, both as regards peculiarities of foliage and the size of the trusses of flowers. Some are indeed remarkable for these qualities. The leaves being prominently marked with white, yellow and crimson, forming a mass of gay foliage and splendid flowers. The following are the names of some of the best:—

Goliah, Nain bébé, Gen. Napoleon III., Pequillo, Paquitta, and Ernest Labbé.

NEW GLADIOLI.—We have already noticed the beautiful additions which have been made to the summer blooming Gladioli. As they are likely to become as great favorites with us as they are with the Parisian cultivators, we name some of

the showy varieties of different shades of color : blooming as they do from August to October, they demand introduction into every flower border. Nothing can be more beautiful than a bed of the following varieties :—

Comtesse de Bresson; Don Juan, Hector, Mons. Blouet, Adonis, Eugenie, Aristote, Aglae, Couranti fulgens, amabilis, Mad. Henricq, Fanny Rouget, Mad. Coudere, Eugene Verdier, Mons. Gorgon, Rosa carnea, and Couranti carnea.

THE ROSE GLOIRE DE DIJON.—Last year I ventured the opinion that this rose would probably surpass all others for a wall rose, in doors, and thus far experience confirms it. At the time of this writing, a bush on the wall of a small green house, has covered a space of ten feet square, and numbers over forty buds, and is making preparation for, perhaps, double that number. It has been in flower since the first of February, and the fragrance fills the house. A Lamarque of the same age, adjoining it, is entirely eclipsed, except in the amount of wood, and is not yet in bloom. The petals of the Dijon are smoother and firmer than I have ever seen them out of doors, and the color decidedly better. On the whole, it is the most desirable rose of its kind, and no light-colored rose in any class can give more satisfaction.—CHARLES G. PAGE, *Washington, D. C., March 5th, 1858.*

Gossip of the Month.

THE AUGUSTA ROSE.—I observe in your Magazine, of the present month, an article from Geo. C. Thorburn, on the "Augusta" rose; attempting, so late in the day, to make out a very visible difference between it and the Solfatare rose.

I don't think it hardly worth the while to expend many words now, about this matter, since the public have had a good opportunity to see, for themselves, these two roses, and have become satisfied of there being no essential difference, if any at all, between them; and if there were no mistake in declaring that this rose sprung from seed, then, as it has been well said before, it is a *reproduction* of the Solfatare. Mr. T. presents a false aspect of the case in the first and latter part of his article. He says "that there

are a thousand and one opinions among horticulturists generally, on the merit and demerit of this (I say *beautiful*) rose." (My experience is, and it is not a limited one, that horticulturists are, almost to a man, united in pronouncing this rose *the same*, essentially, if not thoroughly so, as the Solfatare). The word, "*beautiful*" here enclosed in brackets, is wholly and entirely out of place, for it is calculated to deceive, and only deceive, the unwary reader; it implies that the rose is not thought much of, that it is considered inferior to the Solfatare. The same thing occurs again, near the conclusion of the article. He says, "I have had some experience in flower culture, and, unless deceived, never recommended a *second-rate flower* of any sort." So a false impression is kept up, that this rose is decried, and regarded, as before said, as inferior to the Solfatare. Almost every one, to whom I have applied for an opinion respecting this rose, [the Augusta, (so called,)] and the number has not been small, for inquiries were made, two or three years since, in Philadelphia, New York, Hartford, Boston, and other places, including private as well as public ones, and, almost uniformly, the reply was, it is *the same as the Solfatare*. I do not remember a single instance where the Augusta rose (so called) was regarded as *inferior* to the Solfatare. No, the trouble lies here and only here; the Augusta rose (so called) when sent out, was represented to be a decidedly better, a superior rose to the Solfatare, and it has turned out, in the opinion of all those who have flowered it, (with exceptions, and exceptions only,) to be no better, but *the same*, to all intents and purposes, as Solfatare; and no little feeling was wrought up, from mere disappointment to indignation, with those who purchased it, at the discovery, when the rose came into bloom, that five dollars had been paid for a rose, that either they could have purchased anywhere for fifty cents, (and at many places for a less sum) or, that was already in their possession, and in many, very many cases, had been for years; and the only redress one finds in such a case is to declare, (as many have to me) that they will take very good care "not to get taken in so again."

The remarks of J. F. Allen, respecting the two grapes, Prince Albert and Barbarossa, in a recent letter to the Mass. Horticultural Committee, apply very truthfully to the Augusta rose (so called) and Solfatare. He says, "The Prince Albert and Barbarossa, if not identical, are so like as not to be worthy of distinctive names."

Mr. T. says, every lady who has walked my garden this summer and autumn, and to whom I have always presented an opening bud, (which Solfatare seldom favors one with, being coyishly shy,) exclaimed, "what a delightful rose!" "what a tea scent!" "have you plants for sale?" What of all this? Would they not have made the same exclamations if an "opening bud" had been "presented" of the Solfatare? and could they not get the Solfatare, too, for half the price, or less, than he offered the Augusta (so called) for to them?" Mr. T. says, the flower buds are, however, "much more globular." Not simply *more globular*, but "*much more*;" and yet, I find it no easy matter to meet with a single grower of the rose, around Boston, who can point out a particle of difference between the two roses; notwithstanding Mr. T. finds the buds of the Augusta, (so called,

much more "globular" than Solfatare. Mr. T. says, that it is, for scent, incomparably finer than Solfatare. I shall simply deny that it is any more fragrant than the Solfatare. I will allude to only one other remark of Mr. T.'s. He says, alluding to horticulturists and florists, "I fear their determined will to make it out merely Solfatare, has blinded their better judgment." In my opinion, *his* "determined will" to make out the Augusta (so called) a decidedly different and superior rose to the Solfatare "has blinded *his* better judgment."

There is more left to animadvert upon in Mr. T.'s article, and very much more, upon the matter aside from this, as a whole, but, as I said at the commencement, it is rather late in the day, now, to consume much time upon it. I will conclude by saying, that I am only what is termed an amateur florist, and have never purchased this rose, the Augusta, (so called,) but have had pretty ample opportunity in observing it; and I have but one object in view in opposing any statement which favors the idea of its being a different, or better rose than Solfatare, and that is to stick to the *truth*.
Yours, &c., JAS. JACKSON, *Boston, February 12, 1858.*

AMERICAN POMOLOGICAL SOCIETY.—We have just received a note from the Hon. M. P. Wilder, President, stating that the next meeting will be held in New York, on Tuesday, Sept. 14. The place of meeting and other particulars to be given hereafter.

Horticultural Operations

FOR APRIL.

FRUIT DEPARTMENT.

After the mild and pleasant winter, with the exception of the last fortnight in February, spring commenced in true old boreas style, and nearly up to the present time (20th March) the weather has been the coldest of the year. The snow is now gone, the frost not very deep, and the weather more mild and spring-like.

Grape vines in the grapery will now be growing rapidly with the advance of the season, and will soon be in bloom. Raise the temperature slightly until the fruit is well set. Top the laterals where they are growing too fast, and regulate and tie in the spurs. Maintain a genial atmosphere by closing the house earlier than usual, and damping the walks; rake, top-dress and dig the borders. Grapes in cold houses will now commence growing; tie up the canes to the rafters, air freely, but close up rather early, and syringe often in good weather. Avoid bringing on the vines too fast, or sudden cool weather might give them a check. Finish pruning and training vines in the open air as speedily as possible.

GRAFTING should be proceeded with as rapidly as possible; the earlier the work is done the better.

TREES of all kinds should be transplanted now, first preparing the ground thoroughly.

RASPBERRIES AND BLACKBERRIES should be pruned and trained up as we have directed in a previous page, or neatly fastened to stakes or trellises. Manure and dig the ground.

STRAWBERRY BEDS may be made this month with the best success. Trench and manure the ground.

SEEDS OF PEARS, &c., either dry or kept in the soil all winter, should be planted as early as possible. Rake and clean beds sown in the autumn.

PRUNING TREES.—All kinds of fruit trees should be attended to now, particularly dwarf pears. Manure and dig the ground as soon as the weather will admit.

CUTTINGS of Currants, Gooseberries, &c., should be got into the ground as early as possible.

INSECTS should receive attention, as we gave directions in our March number.

FLOWER DEPARTMENT.

April is a busy month. Nearly every thing of importance that is to be done must have attention now: if omitted another month, it may be too late. The houses should now be abundantly stocked with flowers, and all the bedding stock propagated and ready in frames for putting out, as soon as all danger of frost is past. Many kinds of seed should be sown, that an early bloom may be obtained before those come on planted in the open ground. Running plants in the houses will now require attention; such as have done blooming should be headed in to get a new and strong growth of well ripened wood, on which a good bloom depends.

PELARGONIUMS now begin to show their flowers, and will soon be one mass of bloom: tie out and regulate the shoots if not already done, and water rather more liberally, occasionally using liquid manure. Air abundantly very early, that the growth may be strong and stocky. Fumigate if the green fly appears.

AZALEAS will soon be out of bloom: increase the supply of water, and use the syringe freely. Head in all straggling plants, and repot at once all such specimens as require it.

CALCEOLARIAS must be kept in a vigorous growing condition by shifting as soon as the pots are filled with roots. Keep them in a cool and airy part of the house. Late stock will do best in frames.

CAMELLIAS will now be making their growth; syringe often and liberally, and water well at the root. Plants that require it may be shifted. Keep the house rather close.

FUCHSIAS, intended for large early flowering specimens, should be repotted early, and kept in a rather warm situation; top all strong shoots if bushy plants are wanted.

CINERARIAS will now be in full bloom: keep them clean and healthy by frequent fumigations. Young stock may be kept in a cold frame.

CHRYSANTHEMUMS should be propagated from cuttings, which make better plants than suckers.

PANSIES in pots will require liberal supplies of water, occasionally using liquid manure. Keep them in a cool frame, removing the sashes every fine day. Young stock should be planted out in beds or in the border.

DAHLIAS should be started for early blooming: place the roots in a gentle hotbed, where they will soon push up vigorous shoots. They may then be divided and potted. Seeds should be sown early to get a good bloom.

ROSES may be turned out of the pots into the open garden towards the close of the month. Fumigate to keep down the green fly.

ACHIMENES should be potted now for a succession; those planted in January should now be in bloom.

HEATHS in small pots should be shifted early into larger pots, that they may get well established before they are removed out of doors.

CUTTINGS of all kinds of winter-flowering plants should be put in as speedily as possible, so as to get an early summer growth.

HARD-WOODED PLANTS should now have attention, repotting all that need it—stopping and training out the shoots and making handsome specimens.

TUBEROSES, AMARYLLIS, &c., may be potted and brought forward in an old hotbed, and planted out in May.

ANNUAL SEEDS of the more tender kinds should be sown, such as Balsams, Coxcombs, Stocks, &c. Pot off those already up, and harden them off in cold frames, ready for planting out in May.

HOLLYHOCKS raised from cuttings should be repotted, that they may become strong and vigorous for planting out. Keep in a cool frame.

BEDDING PLANTS should have attention. Cover well, should frosty nights occur, but air abundantly and water freely.

FLOWER GARDEN AND SHRUBBERY.

No time should be lost now in putting the lawn and walks, and flower garden, in order. The soil should be dug early. Prepare at once for sowing the hardy annuals. Remove all coverings from hardy perennials and bulbs, and rake, clean and stir the surface of the beds; transplant to fill vacancies or fill new ground.

CARNATIONS AND PICOTEEES should be set out early to get a good bloom. Prepare the ground at once.

TULIPS AND HYACINTHS will make their appearance above ground: if very frosty nights should occur protect with a mat or straw.

PEONIES should be transplanted rather early.

ROSES should be pruned immediately, and the ground manured and dug.

DAISIES, POLYANTHUS, and other flowers, wintered in frames, should be removed to the border, where they will immediately come into bloom.

PANSIES, wintered in pots or raised from seed, should be planted out early in a good, rich, well-prepared soil, in a half shady situation.

GLADIOLUSES may be planted when the weather is warm and fine.

HERBACEOUS PLANTS of kinds may be transplanted, or taken up and reset when they have grown too large.

HEDGES AND THEIR MANAGEMENT.

BESIDES the several plants we have already described, there are several others that are employed for hedges. The French make use of many kinds, though some of them are not hardy enough for our latitude; and at the South, the Holly, Cherokee Rose, &c., are extensively planted. The Honey Locust makes a good farm hedge, but is quite too coarse for town or villa gardens.

The following kinds are all very ornamental, though generally less protective than those we have before named, viz.: the Berberry, *Althæa*, *Shepherdia*, *Mahonia*, Willow, and Japan Pear, (*Pyrus japonica*,) the latter being very beautiful, especially in early spring, when its coral blossoms bedeck its leafless and dark brown shoots. From its habit of flowering on the old wood, unlike the Privet and many other plants, severe cutting does not destroy the flower buds, and a close-clipt hedge always blooms well. No doubt there are other plants equally well adapted for hedges, requiring only the experiment to test their capacity for this purpose, an object sufficiently important to interest all cultivators in the trial.

The following is a list of the plants used in France, which we copy from Du Breuil's Practice and Theory of Arboriculture:—Wild pear, Wild apple, Mahaleb cherry, Elm, Beech, Hornbeam, Osage Orange, Buckthorn, Montpellier maple, Scarlet oak, *Tamarax gallica*, Hawthorn.

Of Evergreen trees there are some which make most beautiful hedges or screens, admirably adapted for division lines in smaller or larger grounds, or for enclosing the kitchen garden, or shutting out disagreeable objects in garden scenery. If properly planted and judiciously managed they are perfect masses of verdure the year round, and add to the cheerfulness of any situation, particularly during the winter season, when they are conspicuous and attractive features of every residence. We describe a few of the best:—

THE ARBOR VITÆ, (*Thuja occidentalis*.)—Among all the evergreens, this to us appears the best adapted and most ornamental evergreen for hedges. It naturally is not a very large tree, does not grow too rapidly, is perfectly hardy, a native of the most northern regions, holds its color very well, and bears the shears better than any other. From its multiplicity of small branches and absence of large ones, it does not show the rough ends like the larger-branched trees, which need a fresh growth to cover the wounds. It grows in any locality not too dry, does not require any particular soil, and recovers from any accidental casualty much quicker than other evergreens. The Siberian Arbor Vitæ seems to be the perfection of evergreen hedge plants, but at present it is rather too expensive; as soon as it becomes cheaper, it will undoubtedly be universally used, to the exclusion of our common American plant. Its dense, compact habit,—its much richer verdure, both in summer and winter, and its slower growth, give it a preference over all other evergreens.

THE RED CEDAR, (*Juniperus virginianus*.) is recommended by many individuals, and it appears, next to the Arbor Vitæ, one of the best evergreens. Like that, its habit is close, upright, and dense, bearing the shears well, and filling up readily. Its color is its only objection, being dull and gloomy, better suited to the cemetery than the ornamental grounds of a villa residence.

THE NORWAY SPRUCE, (*Abies canadensis*.) which has been planted in many places, makes a strong and thick hedge, but it naturally resists the restraint in which it is kept, and shows too plainly the desperate means used to keep it within bounds. As a coarse and tall screen it can be highly recommended, but for small gardens and grounds, where space is limited, it cannot compare with the Arbor Vitæ.

THE HEMLOCK, (*Abies canadensis*.) one of the finest of all hardy evergreens, if not of both hardy and tender. It is the queen of the Coniferæ, and whatever may be its merits as a hedge plant, it appears to us like vandalism to thwart and clip the growth of such a splendid tree. Still, those who have no such scruples in regard to plants, may use it for hedging, and it does very well, better than the Norway Spruce.

It bears the knife better from its more slender branches, and in spring, when its young growth commences, it possesses that additional beauty for which this fine tree is so celebrated.

THE WHITE PINE, (*Pinus strobus*.)—The first attempt at clipping this noble tree that we have seen was made at Mr. Hunnewell's, at West Needham, as related in previous volumes; as single specimens, trained into round, compact heads, they were pretty objects, showing that it bears the shears well, and may be used quite as readily as the Norway Spruce, which is more rigid in its growth. Its color is light and silvery, contrasting well with the *Arbor Vitæ* or Cedar.

THE AMERICAN HOLLY, (*Ilex*,) and the MAHONIA, (*M. aquifolium*,) undoubtedly make beautiful hedges, but for the present the plants are difficult to be had, only at a high price. When the call for them shall be sufficient to induce our nurserymen to raise larger quantities, the price will no doubt fall within the reach, at least, of gentlemen who possess fine grounds which they wish to be perfect gems of sylvan beauty.

Such are the principal Evergreen hedge plants, and we particularly recommend them wherever ornament alone is the object to be attained. They afford but little protection from animals, but for all enclosures where there is a substantial fence, they hide such disagreeable necessities, offer shelter from cold winds, and give warmth to all grounds whereon they are extensively employed.

PREPARATION OF THE GROUND.—It is all important, in order to have a handsome and permanent hedge, that the ground should be thoroughly prepared. Unless this is attended to, no after-culture will fully obviate this error. If the soil is naturally poor, it should not only be dug deep, but should be well manured; but to do the work properly, it should be trenched. To effect this, mark off the whole length of the ground to be planted full two feet wide, and if four feet all the better. Then proceed to trench it at least eighteen inches deep, and if twenty-four inches better still. Work in, as the trenching is done, some well-decayed manure, and keep the poorer subsoil near the surface, where future applications of enriching matter will correct its present poverty.

PLANTING.—The ground being ready and the surface lev-

elled, set a line just where the hedge is to be planted. Then commence by taking out the soil on one side of the line, cutting with the spade perpendicularly so as to keep a firm and upright bank on the other, against which the plants are to be set. Having the plants all selected, of nearly as uniform a size as possible, place them along the trench about as thickly as they will be needed, which is just six inches apart. Two persons will be required to do the work well, one to place and hold the plant, and the other to cover the roots. Commence setting out the plants by placing them perpendicularly against the bank and line, covering the roots just enough to hold them firm. In this way proceed with the planting, keeping them in a perfectly straight line, for nothing is more disagreeable to the eye than a crooked hedge: although clipping may eventually obviate any little defect in planting, an uneven row will be apparent enough for three or four years. When the plants are all set, proceed to fill the trench partially up, and then with the foot press the earth firmly but not hard upon the roots against the line, and level in the remaining soil. Give the surface a neat finish with the rake, and the work is so far complete.

It is the advice of many cultivators to cut down the plants before or immediately after they are set, and the common practice is to follow this advice. But we have found in our experience that nothing was gained by such haste; on the contrary, it has been rather injurious than beneficial. The theory of this is the same as we have before explained in the pruning of newly-set trees. If the plants are immediately cut down, they are found to make wood at the same time they are forming roots, and hence break weakly, and make a feeble growth; but if they are allowed to get firm hold of the soil, at the end of the first year they will be as well established as if they had not been moved. When they are cut down the following spring, they will throw up vigorous shoots in every direction, and thus form a thick, stout base upon which to rear the hedge, and at the end of the second year they will not only have made more wood than if they had been cut down when set out, but it will be stronger, more vigorous, and, far more protective where protection is an object. Our

advice is, therefore, not to head down until the second year; but those who are in haste, and think the time lost, may follow the directions of some planters, and clip the tops with a sharp shears within four inches of the ground.

There are various opinions in regard to planting hedges in single or double rows. For protective hedges alone it may be well enough to plant double rows, alternating the plants; but generally, and for ornamental purposes, a single row is preferable, as it does not make so broad a base, and has a neater and less clumsy aspect. The only difference in planting single or double rows is, in the latter mode, to open another trench on the opposite side, six inches from the first, and plant in precisely the same manner as before.

But with the planting the work is not finished: the after-treatment is quite as important as the planting: everything depends upon the commencement.

What is required, and what must be obtained, is a good thick and stout foundation upon which to build the hedge. Many failures in hedging result from two causes, viz., inattention to after-treatment, and fear of the use of the shears; hence they are allowed to grow up thick and bushy at the top, and lean and lank at the base. It might be as well here to advise all, who wish to make a hedge speedily, to give up the task at once. It is utterly vain to attempt any such thing. They are the work of time, and cannot be possessed by any who are not willing to patiently await their growth. With thorough preparation of the ground, good plants and planting, liberal manuring, and judicious clipping, a hedge may be grown five feet high in six or seven years—and not sooner.

The evergreen hedges require somewhat different management from the deciduous kinds of which we have been speaking. They should be set full fifteen inches apart, and merely have the ends of the straggling branches cut in the first year. The second year they may be put into proper form.

THE CLIPPING AND FORMS OF HEDGES.—Hedges may be pruned into any shape the fancy may suggest. In olden time the Yew and Box were so treated, and, in Dutch gardens, were cut into every variety of form. Even the late Earl of Harrington, in his extensive grounds at Elvaston, England,

with his passion for evergreens, had a plantation called the "Alhambra Garden," in which everything was in the old style, all the trees being sheared, and many of them forming complete columns of verdure, with plinth, base, shaft and cap. Representations of the shape of some of these old clipped Yews may be seen in Loudon's *Arboretum*, and other gardening works.

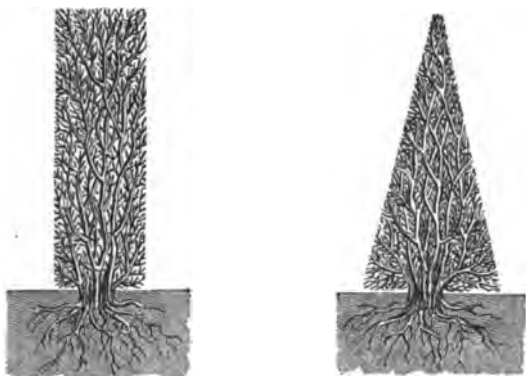
But of this we may speak again; our object is to give some hints in regard to the appropriate form of ordinary hedges, which may readily be effected by any skilful gardener who understands his profession, or by any amateur who has a good eye in regard to form.

Ordinarily, the hedges usually seen are mere lines of stunted trees, with their tops sheared off, and the base nearly or quite bare. This has been brought about by neglecting to cut the plants down low enough at first, and by omitting to cut them low enough at each successive clipping; the tendency of the sap is to the top, where the branches grow vigorously and rob those beneath, which soon cease growing, while the top becomes a bushy head, requiring hard and repeated shearing to keep within bounds, whilst the lower part requires no cutting at all. In fact, the hedge soon becomes the very reverse of the shape it should be, or rather, we might say, "bottom side up." Instead of being in the form of the letter A, it is the shape of the letter V.

Undoubtedly a greater portion of those who plant hedges really do not know what the proper shape should be, or even what form they intend to have it. Common sense dictates that it must be clipped, or it will soon become too large and unmanageable; but we believe we are correct when we say no very definite idea is entertained in regard to any particular shape the hedge is to assume when it is planted. If so, they would not be such ill-shaped things as are usually seen.

As we have remarked, they may be cut into various forms, but there are only two which are generally adopted; these are the square and pyramidal. The French shear the greater part of their hedges in the former style, while the English adopt the latter, as represented in the annexed engravings, (FIGS. 9, 10.) The first, being the French, (FIG. 9), and the latter the English, (FIG. 10.)

For protective hedges, the French mode presents a rather more formidable barrier, but does not have the neat appearance of the English style; besides, it requires a very good workman to keep the sides and top even, without which it is highly offensive to the eye. The inverted V shape, on the contrary, will not show any little unevenness of surface in the cutting. Other objections to the flat top are, in our climate, that heavy snows break down and injure them, and such gaps are not so easily made good as in the sharp top. Still another



9. SQUARE FORM OF HEDGES.

10. PYRAMIDAL FORM OF HEDGES.

objection is, that the flat-topped hedges are more apt to get bare at the base.

We have not the space to go into all the details of yearly pruning, until the hedge attains its full size in the fifth or sixth year. The periods of clipping are usually May and August; the May shearing being hard, cutting clean back to preserve the perfect inverted V shape, (FIG. 10), and not the Gothic arch, which some advise, but which always show a weak arm. Do not attempt to increase the hedge more than six or eight inches a year. Limit it to three feet wide at the base, and seven or eight feet high, if pruned in the pyramidal form, and about eighteen inches wide if pruned in the square style. If the work is well done, the surface of verdure should be as smooth as a carpet.

In conclusion, let us advise all who desire a good hedge to have patience. Time, which accomplishes all things, will alone in this case perfect the work.

THE BOTANICAL AND HORTICULTURAL LITERATURE OF
THE OLDEN TIMES, WITH REMARKS ON THE SPECIES
AND SORTS.

BY JOHN L. RUSSELL, PROF. BOT., ETC., TO MASS. HORT. SOCIETY, &c., &c.

PART IV.

IN section 3d we have

"OF SUCH PLANTS AS ARE PROPER TO THE COUNTRY AND
HAVE NO NAMES."

The *Goodyera repens*, or Rattlesnake Plantain, seems to have made considerable impression on JOSSELYN in the "proper" native plants of New England. He gives us a figure of the leaf very well executed, and regrets that he fails of carrying it to England as a rarity of great value.

Also, a singular figure of Skunk Cabbage, *Symplocarpus fœtidus*, accompanied by a barren stem of *Equisetum*, which he imagines has some necessary connection with the flower of the former plant. It "hath a sheath or Hood like Dragons, but the pestle is of another shape, that is, having a round purple Ball on the Top of it beset, as it were, with Burrs; the Hood shoots forth immediately from the Root, before any Leaf appears, having a green sprig growing fast by it like a small Horsetail: about the latter end of *April*, the *Hood & Sprig* wither away, and then in the Room comes forth a Bud, like the Bud of a Walnut Tree and bigger; the Top of it is of a pale green, covered with Brownish skin like an Onion, white underneath the Leaves, which sprout in Time out of the Bud, grow from the Root with a Stalk a foot long, and are as big as Great Burr Dock leaves and of the same Colour; the Roots are many, and of the Bignesse of the Still of a Tobacco pipe, and very white; the whole Plant scents as strong as a Fox; it continues till *August*."

A remarkably good figure of *Impatiens fulva*, called by him "a Branch of the Humming Bird Tree"; another of *Nabalus altissimus*; still another of *Chelone glabra*, each accompanied with marvellous narratives, brings us to a very pretty picture of our *Cornus canadensis*, which our author mistakes for the English "*Herb Paris* or True Love or One berry or rather *One flower*, which is milk white, and made up with four

leaves, with many black threads in the middle, upon every Thread grows a Berry (when the Leaves of the Flower are fallen) as big as a White Pease, of a light Red Colour, when they are ripe & clustering together, in a round Form as big as a Pullets' egg, which at a distance shows but *One berry*; very pleasant in taste and not unwholesome; the Root, Leaf and Flower differ not from our English kind; and their Time of blooming and ripening agree, and therefore doubtless a kind of *Herba Paris*." The splendidly colored fruits of the Bunch berry is here evidently intended—strangely taken for *Paris quadrifolia*, quite an inferior looking plant. The *Cornus canadensis*, on the other hand, is a cospecies with the showy and Snowy Flowering Dogwood, *C. florida*, and, like it, will even consent to artificial cultivation in the garden.

A famously executed figure next introduces us to the "Small Sun Flower or Marygold of America," which I suppose to be intended for *Helianthus divaricatus*, which grows plentifully about our neglected fields, a conspicuous weed. A very minute description attends this figure in the Treatise, which, however, does not serve much to elucidate the point, the cut on the accompanying pages being so much more preferable.

The fourth section reads thus, viz.:

"IV. OF SUCH PLANTS AS HAVE SPRUNG UP SINCE THE ENGLISH PLANTED AND KEPT CATTLE IN NEW ENGLAND."

This list is at once curious and interesting, and, if we can depend upon the accuracy of the names, shows how rapidly the foreign weeds were usurping the places of the native flora. Thus, twenty-one distinct kinds are mentioned as being already naturalized in about "forty years," as follows:

Couch grass, *Triticum repens*.

Shepherd's purse, *Capsella Bursa-pastoris*.

Dandelion, *Taraxacum dens-leonis*.

Groundsel, *Senecio vulgaris*.

Low Thistle, *Sonchus oleraceus*.

Wild Arrach, *Atriplex hastata*.

Night Shade, with white flowers, *Solanum nigrum*.

Nettles stinging, *Urtica urens*. PARKINSON says that they were introduced into gardens as pot herbs.

Mallows, *Malva rotundifolia*.

Plantain, or *English Man's foot*, *Plantago major*.

Black Henbane, *Hyoscyamus niger*.

• *Wormwood*, *Artemisia absinthium*.

Sharp-pointed *Dock*, *Rumex acetosella*.(?)

Patience, *Rumex* sp., resembling the *Patience Dock* of Europe.

Bloodwort, *Rumex sanguineus*.

Knot Grass, *Polygonum aviculare*.

Chickweed, *Stellaria media*.

Compherie, *Symphytum officinale*.

Mayweed, *Matricaria inodora*.

Great Clot Burr, *Lappa major*.

Mullein, with white flower, *Verbascum blattaria* and variety.

V. OF SUCH GARDEN HERBS AMONGST US AS DO THRIVE THERE AND SUCH AS DO NOT.

Cabbidge grows there exceeding well.

Lettice.

Sage.

Sorrel.

Carrots.

Parsley.

Red Beetes.

Marygold.

Radishes.

French Mallows.

Turnips.

Chevoil.

Parslain.

Burnet.

Wheat.

Winter Savory.

Rye.

Time.

Oats.

Barley, which commonly degenerates into Oats.(!)

Pease of all sorts, the best in the world: I never heard of, nor did see, in eight Years Time, one Worm eaten Pea.

Parsneps of prodigious size.

Garden Beans.

Naked Oats, there called *Silpee*.

Spear Mint.

Rew will hardly grow.

Fether few prospereth exceedingly.

Southern Wood is no plant for this country(!), nor Rosemary, nor Bayes. White Salter(?) groweth pretty well, so doth Lavender Cotton. (?) But Lavender is not for the climate.

Penny Royal.

Smalledge.

Ground Ivy or Ale Hoof.

Gilly Flowers will continue two years.

Fennel must be taken up and kept in a warm cellar all winter.

Houseleek prospereth notably.

Hollyhocks.

Enula Campana, in two Years' time the Roots rot.

Conferie, with white Flowers.

Coriander and

Dill and

Annis thrive exceedingly: but *Annis seed* and also the Seed of *Fennel* seldom come to maturity: the Seed of Annis is commonly eaten with a fly.

Clazy never lasts but one summer, the Roots rot with the frost.

Sparagus thrives exceedingly, so does

Garden Sorrel and

Sweet Bryer or Eglantine.

Bloodwort but sorrily but

Patience and

English Roses very pleasantly.

Celandine—grows but slowly.

Muschata(?) as well as in England.

Dittander or Pepper wort flourisheth notably, so doth

Tansie.

Musk Mellons are better than our English, and

Cucumbers.

Pompions there be of several Kinds, some Proper to the Country: they are dryer than our English Pompions and better tasted; you may eat them green."

This concludes the description of the Vegetable wonders, productions and rarities of such parts of New England as came under Josselyn's observations.

Since commencing these articles in this Magazine I have the pleasure of learning, from an esteemed friend and distinguished botanist of this State, that a new edition of Josselyn's "New England's Rarities Discovered," with copious notes,

will issue shortly from the press, under the auspices of a learned Society. Ignorant of this fact until after these communications were prepared, I have entered on the work under my own hands in such a manner as merely related to our Horticulture and Botany in its earlier periods of New England history, and am now glad to await the promised new edition, announced a year ago in some of the Boston prints, which unfortunately did not meet my eye.

MANAGEMENT OF LAWNS.

BY THE REV. A. D. GRIDLEY, CLINTON, N. Y.

No feature of a country residence is more important than a good lawn. Without this, a rural home is sadly deficient, however numerous and costly its other decorations may be. A fine house, rows of thrifty trees, flower-beds, and vases and statues are all very well, but the eye does not feel satisfied unless these embellishments rest upon a broad base of smooth turf. Flower borders are desirable in their place, but if one's grounds are filled up with them, it is difficult to keep them in a state of neatness; and even if kept in the best condition, the eye sooner tires of their daily view than of a simple, quiet lawn. The prevailing expression of the grounds of a country home should be that of *repose*; and that expression is interfered with if the grounds are devoted largely to flower-beds. The flowers themselves are gay and exhilarating, and the sight of extensive parterres suggests the thought of the time and labor necessary to keep them in good order.

Not the least argument for lawns, is the permanence of their beauty. In spring, the grass shoots up almost as soon as the snow-drop and crocus appear; and if the soil has been well prepared, the lawn in midsummer is almost as green as in spring; the fragrance of its frequent mowings is more delicious than the "extracts" of Parisian perfumers; the sight of children playing on the velvet turf, or of the shadows of graceful trees stretching across it, is worthy of a painter. The winds which despoil trees and flowers of their beauty,

and the frosts which blight them, leave the grass unharmed. And in autumn, amid falling leaves and prevailing gloom, it retains its cheerful verdure until hidden by the winter snows.

There is an air of refinement in a well-kept lawn. It distinguishes a place at once from the uncultivated wildness of nature,—it speaks of the hand of taste which has fenced in this nook from the common earth, smoothing down its roughnesses, heightening its native beauty, and still watching over it with affectionate care. It links the spot by association with the elegant and happy homes of other lands and other times.

If, then, there is so much interest attaching to lawns, it is important that they be well made, and afterwards well cared for. A good lawn is a work of art—it does not come by accident. In some cases, the first work to be done in making it, is draining. This will certainly be needful, if there are any wet, springy spots in the ground, or if the subsoil is cold and stiff and retentive of moisture. The finer grasses will not thrive in a wet soil, but mosses and sorrel will usurp their place. The trees, shrubs and plants set out upon it will lead a miserable existence, if they do not die outright. And draining should be followed by a thorough breaking up of the subsoil,—the work to be done with a plough if the space is large, with a spade if small.

The principal reason why most lawns turn brown in summer is that the grass has only a thin surface soil in which to extend its roots; and as soon as that becomes dry, the leaves must of necessity wither. Trench that soil, and the grass will send down its roots below the reach of drouth, and will flourish in perpetual green. Manuring should go along with trenching. It is not enough to enrich the surface, for though that may cause the grass to start well in the spring, it will not ensure its freshness throughout the summer. If manure is incorporated finely with the whole body of the soil, it will improve its mechanical texture, and furnish food to the grass and whatever else is planted in it.

The importance of this thorough preparation of the soil can hardly be overestimated. Too often it is entirely neglected. Most persons, in constructing a rural home, expend

their means on grand houses, outbuildings, fences, equipage, furniture, and the like,—leaving the work of preparing their ground for horticultural operations for the last thing; it is then done in a hurry, and of course imperfectly. Trees are planted, but do not grow vigorously; grass seed is sown, but it comes up only in patches, and turns brown in summer. As the proprietor afterwards walks through his grounds, amid his parched and barren grass-plots and his dying trees, he exclaims, bitterly, “And this is rural life! this the Arcadia of which I dreamed! The whole thing is a nuisance!” We repeat it, then, that this thorough foundation-work is of the greatest importance. He who does it well, need seldom sigh for the “weeping skies” of England to keep his grass verdant.

The ground being well broken up and enriched, it should then be raked smoothly, and the roots of all weeds exterminated. If the space is large, it should be sown with grass seed. Red-top and white clover make an excellent turf, two quarts of the latter seed to a bushel of the former. Some persons prefer “blue grass” to red-top, thinking that it makes a finer and closer turf, and withstands drouth better. It improves either mixture to add a small proportion of “sweet-scented grass,” for the sake of its fragrance when mown. Sow liberally, at the rate of three bushels to the acre, choosing a still day for the purpose, and raking lightly afterwards. A roller passed over the ground completes the operation. If the space is small, it may be covered at once with sods cut from the roadside or common. Care should be taken, however, to select turf free from weeds and coarse grasses. Stretch a line across it, and with a sharp spade cut the sods into strips a foot wide, roll them up in balls, and carry them to the spot where they are to be used. Then begin on one side of the lawn to unroll them, matching the edges neatly, as a lady does her carpet, until the surface is entirely covered. Go over the whole with a turf-beater or an iron roller, and the work is done.

But a lawn once made will not take care of itself. It should be mowed once a fortnight, and when it borders on walks, carriage roads or flower beds, it should be kept neatly clipped with garden shears. For mowing small surfaces,

nothing is better than the English lawn scythe, which cuts closer and smoother than the common narrow field scythe. For large grounds, it is advisable to use a lawn mowing machine, which does the work better than it can be done by hand, and much more expeditiously. A roller should be passed over the sward after every mowing. Once in two years a lawn should receive a light dressing of old manure or guano; and, every third or fourth year, a little fresh grass seed should be scattered over it, to supply the place of any roots which may have perished.

Our lawn proper is now made; but we wish to say a few words about the arrangement of trees, shrubs and plants upon it. In determining the proper position of trees, it has been recommended, by high authority, to throw a bushel of potatoes into the air, at random, and then to set trees wherever the potatoes drop. This advice was given to enable young planters to avoid the formality of straight rows and equal distances. But there is no need of such child's play. Simply to plant without any design or meaning whatever, will not make a scene natural and graceful. Every tree should be set with a definite purpose, and all may be so arranged as to seem *at home* just where they stand. No universal rule can be laid down for the arrangement of grounds,—each place demands its own treatment,—yet there are certain general principles which should always be observed.

Obviously, the outskirts of a lawn should be so planted as to hide disagreeable objects. Why should your eyes and those of your visitors be daily pained with looking upon the rear premises of your slovenly neighbor, or upon you own barns and outhouses? A few trees skilfully disposed would conceal them. Why should your division fences be thrust continually upon the sight? They suggest limitation and restraint; they perpetually remind one of the comparative pettiness of the beautiful scene around him. Hedges and clumps of low trees, set in flowing lines near the margin of the premises, would keep such fences out of sight. The more largely these screens are composed of evergreens, the better. In planting the boundaries, the largest trees should

be set near the fence, and smaller trees and shrubs running out and dispersed over the grounds within.

It is sometimes objected to this manner of planting the outskirts of one's grounds, that it is unneighborly and exclusive. "Leave your grounds open on every side," it is claimed, "to the inspection of the public; let every passer-by see and enjoy all that you possess." But must we not, also, throw open our houses to gratify the public curiosity? We beg to know whether a man may not give at least a portion of his grounds so much privacy that his family can resort to them frequently without being gazed at by every street-goer? Is not a lawn more home-like, if it is partially screened from the dust and publicity of the highway? Besides, to say nothing about the need of protection from cold winds, there are few residences so complete in all their appointments that their effect is not enhanced by a partial concealment, the imagination always conceiving something better of what the eye is not permitted to behold. These things being said, it should also be considered that the proprietor of a pleasant country place owes something to the public. There are many persons of fine rural tastes, who yet have not the means of gratifying them in lawns, trees and flowers of their own: let them have a glimpse, from the roadside, of your beautiful grounds; and let the gate of your premises be always open at their call. The public taste generally will also be much improved by the daily view of well-kept grounds. And where is the man so selfish as not to find happiness in thus ministering to the happiness and the improvement of others? We hold, therefore, that while one's premises should be belted with trees and shrubs sufficient for shelter and privacy, they should also be open at certain points to easy observation from without. Every visitor, too, fond of cultivated rural scenes, should be admitted to the grounds with a hearty welcome.

The position of trees on a lawn, and their number, will depend much upon the extent of the grounds. In a large establishment, many large trees may be planted, both singly and in groups; but in this country, most lawns are small, and large trees must be confined chiefly to the boundaries. In planting a lawn, the object is not to see how many trees it

will conveniently hold, and then to set them out in rows, like an orchard. The beauty of a lawn consists chiefly in broad reaches of smooth, unbroken turf, surrounded by a waving border of pleasing foliage, with here and there a graceful tree casting its shadow across the velvet sod. As the lawn is generally a highly-dressed scene near the house, the trees should be few, and those of the finer sorts, with neat bark and leaf. A few shrubs may find a place on the lawn. Those of good form and foliage may stand singly, as miniature trees; others may be set in masses. And here, there will be room for the display of taste in the arrangement of colors. We have seen a fine effect produced by mingling the dark green of the European Strawberry tree with the gray hues of the Missouri Silver tree and the purple of the Purple berberry, the whole blended and softened by the lighter shades of other shrubs.

Our lawn will not be complete until it is enlivened, here and there, with flowering plants. We will not cut it up with large beds, and crowd them with straggling, ill-assorted specimens. Herbaceous perennials and annuals we will confine chiefly to a little flower garden kept by itself on one side of the grounds, and mostly concealed from the lawn. There, we will reserve a place for the old-fashioned plants which our childhood so much loved. Pæonies, flower-de-luce, columbines, pinks, poppies, holly-hocks, morning-glory, cockscomb, larkspurs, sweet-william,—but there's no end. These, with their waxing and waning beauty, would not comport well with the highly finished character of the lawn. But we will cut out a few circular or other graceful figures in the turf near the walks, and fill them with plants of neat habit, and which flower throughout the summer. Among these, we need hardly say, the best are verbenas, petunias, geraniums, lantanas, heliotropes and perpetual roses. Several of these beds—those especially which border the most frequented walks—we will set with early flowering bulbs, which can be taken up, or have their tops cut off, after their period of blooming is passed, to make room for the bedding plants. In this way, a succession of flowers can be had from early spring to late autumn.

A lawn so made and planted should be well cared for. Weeds should not be allowed to invade it; the grass should be kept short, and the flower beds and walks always kept neat. Such a lawn will afford continual satisfaction.

NEW HARDY CONIFERÆ.

BY F. L. HARRIS, GARDENER TO H. H. HUNNEWELL, ESQ., W. NEEDHAM, MS.

THE winter of 1856 and 1857 was acknowledged, by all interested in the culture of new evergreens, conifers, &c., to have been peculiarly destructive; especially so was it the case with those of recent importation.

I do not attribute their injury so much to the severity of the winter, but to the fact that the young growth had not sufficiently matured to resist the intense cold of December, 1856. *Cedrus Deodara*, *Abies Douglasii*, *Abies Smithiana*, and many others in exposed situations, were somewhat injured, but I am happy to say that during the past summer they fully recovered, and at present appear in health and vigor, having survived the winter without any injury whatever.

The autumn of 1857 presented a striking contrast to the one preceding, the temperature throughout November and December having been so mild as to prepare the trees to withstand the rigors of winter; and could we always depend on similar autumns, I am sanguine there would be no lack of variety in American landscape scenery.

It may prove interesting to you and to the lovers of evergreens generally to know the sorts of conifers that have proved hardy on the grounds of H. H. Hunnewell, and I therefore send a list, as it may induce other gentlemen to plant them more extensively:—

Washingtonia gigantea, the big tree of California, appears as hardy as our common native juniper.

Cephalotaxus Fortunei, (male and female), the two sexes so different in their appearance—both handsome, with long, light green, yew-like foliage.

Cephalotaxus drupacea, very beautiful, with foliage much larger, and more sombre than the common yew.

Abies Douglásii, *A. Smithiána*, both very ornamental; *A. Clanbrasiliána*, *A. pùmila*, *A. Menziésii*, *A. pygmea*.

Picea pinsápo, *P. nóbilis*, *P. Webbiána*; these are splendid trees and should be extensively planted: *P. píchta*, *P. Frasérif*, *P. Nordmaniána*.

Pinus ponderósa, *P. Beardsleyii*, *P. Benthamiána*, *P. Lambertiana*, *P. monticolor*, *P. insignis*.

Cèdrus Deodàra, *C. Deodàra robústa*, *C. africànus*, *C. Libàni*.

Táxus elegantíssima, *T. fastigiàta*.

Juníperus recurva.

Ledums, *Ammyrsinus buxifólium*, *A. thymæfólium*, two pretty dwarf-flowering evergreens.

Andrómeda floribúnda, covered with flower buds, very ornamental.

PEA WEEVIL. (BRUCHUS PISI.)

BY A. R. POPE.

EVERYONE who has raised seed pease in Massachusetts, and in States south of Massachusetts, knows the annoyance experienced at this season of the year, upon finding a large cavity in nearly every pea, and the whole mass seemingly alive with black beetles. To be sure, the germ of the pea is not usually so much affected as to cut off the crop; but the healthy growth of the new plants is materially impeded by the injury.

The natural history of this annoying insect may not be familiar to all the readers of this Magazine. Almost as soon as the pods are formed under the blossom, or as soon as the young pease begin to swell, the pea beetle makes a minute puncture upon the side of the pod, and directly opposite to the pea, and there deposits an egg. The wound is so small as to escape all but careful examination. Sometimes every pea in the pod will be thus attacked.

In a few days, a grub is hatched from that egg, and immediately commences to eat its way into the heart of the pea, leaving a small dark scar in the hull, though scarcely larger than the point of a pin. The insect continues to grow until

after the pea is ripe, and usually attains its full size—about an eighth of an inch—by the time the pea is thoroughly dry. It is then a white grub, and has bored out a cavity more than large enough for its body, by feeding upon the marrow of the pea. By this process the pea usually loses nearly one half its weight.

Soon afterward, the grub becomes a brownish pupa, and lies in that state till late in the autumn, or even partly through the winter, when it casts its skin, and becomes a black beetle, prepared to institute a new generation of its ravaging descendants. As each pair of beetles is estimated to produce two hundred or more new grubs, the rapid increase of these insects is easily understood; so that the whole pea crop will hardly prove sufficient, a few years hence, for the maintenance of the progeny of the pea beetles.

The chief feathered enemies of the pea weevil are the crow black-bird and the Baltimore oriole, and these both possess a wonderful instinct by which they detect the concealed insects, though to reach them they must split open the pods. But still they do not sensibly diminish the number.

Deane, who first carefully noted the habits of this insect, recommended the keeping of seed pease in tight vessels over one season, that thus the escaping beetles might perish. Scalding the pease before planting will destroy those which have not left their holes. But plans like these, to be reasonably successful, must not only be generally adopted, but must be most carefully carried out, and as much with the pease not to be used for seed as with those that are so used.

The writer of this article has tried a method, which he has not seen anywhere mentioned, and has found it to be completely effectual. He would therefore suggest it as a proper way of greatly reducing the number of, if not exterminating these little pests, which are now eaten *boiled*, in the grub state, with green pease, and drank in *modern coffee*, in the beetle state, *roasted and ground*. The method proposed is this:—

As soon as the pease are ripe enough to be gathered, let them be stripped from the pods, and dried carefully for a day or two in the sun. Then place them, in suitable quantity, in

a colander, and, after covering them with a plate, set the colander over a vessel of boiling water, until the steam has thoroughly passed among the pease. Then take them out and spread them for a few minutes to dry, when they will be ready to put away. In this way every insect will be destroyed in its then condition, while the germs of the pease will not be injured.*

The following manifesto on this subject has just come to hand, and it seems to be so nearly just what is needed, that one could wish that it might be copied from this Magazine, and published once at least in every secular and religious daily and weekly newspaper in the land of pea beetles. Let the reader note its contents, and govern himself accordingly.

"WHEREAS, certain ill-disposed persons have surreptitiously purloined a considerable portion of the rich marrow properly belonging to us:

"Therefore, the more effectually to prevent the same in future, it is ordered, that no persons shall be allowed to raise any seed pease in the United States of North America, under penalty of incurring the displeasure of all *vegetarians*, except as hereinafter provided.

"1. All seed pease, before being planted, shall be duly scalded by the application of boiling water, until the beetles, now inhabiting them, are dead.

"2. As soon as the ripe pease are again gathered, or within a reasonable time thereafter, and before the first day of October, they shall be placed in a colander, or some similar vessel, and subjected to the application of the steam from boiling water, long enough to parboil and destroy the *pupæ* of the pea weevil.

"Farmers, gardeners, and horticulturists generally, who are too lazy or too careless to practise upon this, or upon some more available way of accomplishing the same object, will hereafter be expected to *eat* their ripe pease before any of the pea beetles have escaped, and to procure a new supply for sowing from Canada, until further notice.

* I send herewith some samples of the pease thus treated, to show you, Mr. Editor, how the grubs were left; and will remark, that my garden is already demonstrating that the germs were not hurt.

"Given under our hand, this first day of May, 1858.

PEASE PORRIDGE.

"A true copy of the original document, which editors of all newspapers are requested to keep before the community, and send their bills to the subscriber. GREEN PEASE."

THE CULTURE OF THE VERBENA.

BY H. S. RAND, JR.

THERE are few plants which lend more beauty to the flower garden in summer, or contribute to the display of the greenhouse in the later winter or early spring months in a greater degree than the verbena.

From the variety of colors, the rapidity of propagation, the little care needed to bloom the plant in perfection, and the abundance of blossoms afforded, it is a universal favorite.

In addition to these advantages, the facility with which new varieties are raised from seed render it a favorite with the amateur; and in no collection of flowers do we fail to find some varieties of the verbena.

It is a difficult task to prescribe the culture of a flower so well known, and which will grow and flourish under such a variety of circumstances and in such different situations. Each cultivator has his own opinion, chiefly based upon his own success, and holds it rightly, for it is our nature to derive far more advantage from our own experience than from that of another; to rely on what we ourselves know far more than on what another may say, though his experience be ten fold our own.

Again, in writing of a plant produced with such ease and sporting into such an infinite variety of colors and shades, one cannot be too careful in expressing a decided opinion. Within the last five years the varieties have multiplied so greatly that the difficulty now is to choose and select those really worthy of cultivation; the favorite of this year may next spring be cast aside as worthless, and with reason, for it may not stand the test of a year's culture, or far better varieties may have been originated.

Yet care must be taken and judgment exercised before we cast aside old favorites and well proved kinds for newer varieties, which trial may show far inferior to those discarded. The passion for the new prevails to far too great an extent in floriculture, and while in moderation it may be productive of great good, carried to excess it cannot fail to produce the most disastrous consequences. Our amateurs and gardeners must learn that a new plant or variety, and a desirable or ornamental one, are two very different things, and must exercise their judgment rather than allow the passion for novelty to get the better of it. No one who, for the past few years, has watched the progress of floriculture, need tax his memory to call to mind the many new varieties of plants, with high-sounding names and fulsome recommendations, which a few months' trial has shown to be perfectly worthless; and too much care cannot be exercised in "bringing out" or importing new plants.

The name *Verbena* is of Latin origin, being derived from the word "*herba*," any plant of a low spreading growth; thus, *herba*, *herbena*, *verbena*. Its original meaning was any sacred branch or herb; as, for instance, of cypress, rose, laurel, olive or myrtle, as we learn from Livy and Celsus; these *verbenæ* or branches were used at sacred ceremonies, or for religious purposes. The *fetiales* or priests, whose duty it was to declare peace or war, to form leagues and alliances, wore these *verbenæ* twined around their heads, and from this were sometimes styled *Verbenarii*. They were also borne by suppliants who sued for protection, as we learn from Cicero, and placed on the altars or wreathed around them, as we find them thus mentioned in Terence and Ovid.

Their use in sickness, as being of a cooling nature, is also mentioned in Celsus, but whether in this connection a particular plant is intended is doubtful. The word, as commonly translated, signifies Vervain,* of which we have many species, and it is a little singular that a plant, having so simple an English synonym, should so universally retain the Latin or

* Some derive the word Vervain from the Celtic name *Ferfaen*, probably referring to its use in the rites of heathen worship. For an interesting account of this plant, see Baxter's *British Flowering Plants*, Vol. I., p. 26.

botanical name; the old Latin name for vervain, however, is *Verbenaca* and not *verbena*.

The vervains common with us are the *Verbena hastata* and *Verbena urticifolia*; the former, a tall, showy plant, blooming in August, and quite plenty by roadsides, a perennial; the latter far more common, being found about fences and hedges and of little beauty. The flowers of the former are of a dark purple color and imbricate; of the latter, white, small, and not imbricate.

Verbena venosa is an upright-growing plant, a foot or more high, bearing rosy purplish flowers in July and August; its chief recommendation is that it is hardy, and readily propagated.

The *verbena* was introduced into England from Buenos Ayres, where it is indigenous, by Mr. Hugh Cumming, an ardent lover of nature, about the year 1825. The first and for some time the only variety cultivated, was the *Verbena Melindres*, or *chamædrifolia*, but it now appears lost among the variety of new and superior kinds which have been raised from seed. In color and form it has been repeatedly excelled, but its creeping habit and abundance of bloom must always recommend it, though we doubt if, at the present time, it can be obtained at any of our greenhouses, and probably many of our younger cultivators have never seen this once popular variety. The color is scarlet, and for bedding purposes, though perhaps equalled, it can never be excelled.

Verbena multifida, with lilac purple flowers, was introduced from Peru; *V. Tweediana*, with rose crimson flowers, from Brazil, and from these and seedlings have originated all the numerous varieties, many hundreds in number, which may be found in extensive collections.

The credit of introducing this plant into the United States belongs to Robert Buist of Philadelphia; about the year 1835, from seed received from Buenos Ayres, he raised the first white, pink and crimson verbenas. The plant soon became generally known and was everywhere a favorite; in the floral world it caused quite an excitement, and the original kinds were soon surpassed in every respect by fewer seminal varieties.

The culture of the *verbena* is very simple; the plants will

bloom well with very little care, but to grow them in perfection requires attention: of thousands of plants of any size scarce one is a really beautiful specimen.

Let us begin in early spring and trace the plant as generally grown, and then see how much a little care might increase its beauty. About the first of February cuttings of the young shoots are taken from old plants; in a sandy loam a few weeks and sometimes a few days will root them; they are then potted off into thumb pots, and, if placed near the glass, will soon show a terminal flower. As soon as the season is sufficiently advanced these young plants are bedded out, and, in favorable seasons, soon form a conspicuous feature in the flower garden, continuing to bloom till long after the early frosts.

About the first or middle of September the gardener begins to repot his plants for winter, and the common practice is to take a runner which has rooted well at a joint, and, after suitable pruning, to pot it for winter blooming and propagation; others again take up the old roots, while others, by sinking pots in their verberna bed about midsummer, allow the runners to root directly in the pots; the pots being taken up and the connection with the mother plant cut, the young plant receives no injury or check. But this mode is very objectionable for two reasons; first, the loam in the pots is apt to become sour and sodden, and again, earth worms often enter the pots and prove injurious during the winter. The plants are housed, and, for a long time, produce no flowers, and are anything but ornamental. Soon after the new year, they begin to grow vigorously, but are allowed to trail carelessly over the staging, or droop from some overhanging shelf; no care or attention is bestowed upon them except to give the daily supply of water. The days grow towards spring; cuttings are again taken off, the same process is repeated year after year, and thus one of our loveliest flowers, which, with a little care and trouble, might be one of the greatest attractions and ornaments of our greenhouses, is never seen in perfection except in the garden.

That this is the fact is to be deplored, yet the remedy is simple; by beginning about midsummer we may have verbenas in bloom as well during the winter as the spring months.

About the first of August, or earlier, cuttings should be taken from desirable varieties; in a fortnight they will be ready to transplant; pot them in thumb-pots, and repot as soon as the roots touch the sides of the pot; keep them in vigorous growth by affording plenty of light and air, being careful they never suffer from want of water; pinch off the leading shoots to cause all axillary buds to break, and in no case allow them to flower; train the plant into any form desired, but be careful not to permit it to grow too straggling. When other plants are housed remove your verbenas to some warm shelf where they will have the morning sun, and on every favorable day give plenty of air, and fumigate well to destroy green aphids. Your plants will soon be in luxuriant bloom, long before those potted in the old way have shown a bud, and will continue to afford an abundance of flowers until late in the spring.

To grow verbenas well in the house in summer is far easier; they may be bloomed in pots of any size and trained in almost any form, the only requisites being plenty of light and air, careful pruning, and means to destroy aphids and keep off mildew.

One of the prettiest modes of growing them for the greenhouse or exhibition, is to pot three or five young cuttings in a large, round seed pan; pinch in the leading shoots to cause the eyes to break, and train all lateral branches towards the outer rim of the pan, tying them to slender twigs; do not allow any shoot to be more than six or eight inches in height, nor permit your plants to bloom till they are a mass of foliage; they will, when in bloom, be fine specimens and very ornamental. This is probably the best way to grow new varieties for exhibition, as they show to the best advantage, and the habit of the plant is more easily determined.

One great fault in growing verbenas is the practice of watering too frequently; the plant, as originally found, grows on dry hills, and damp not only produces mildew, but rots the roots, and thus destroys or produces disease in the plant.

The proper soil for verbenas is two parts of loam, two of leaf mould, with an admixture of sand, and in this we have found them grow and bloom luxuriantly.

But it may be said, the verbenas are naturally a trailing or

running plant; why not allow it in the greenhouse to ramble as in the garden? Could we have a *bed* of them in the house this might perhaps be a fine way to show them to advantage, provided always the bed could be near the glass, and sufficient air be afforded; but very few can devote so much space to one flower. The object in a greenhouse is to have as large a variety of choice plants as can be grown in so small a compass, and to ensure beauty both in plant and flower should also be the aim of the gardener; but how often is this done? In almost every greenhouse we see the plants crowded together, bare-stemmed, tall, awkward specimens, or trailing over the pots with long, leafless branches; they may be in bloom, but the flowers are produced on the ends or tops of the branches, and are never seen to advantage. It is to remedy and avoid this evil that we recommend growing specimen plants, even if, to do so, we have to discard many varieties or species. A couple of hundred well grown specimens are far more beautiful than as many thousand stalky, straggling, tall-drawn plants. The rule should be applied to all plants, though many may smile at adapting it to verbenas, heliotropes, &c., plants which will bloom with little care. The whole resolves itself into the old school-boy maxim,

“What is worth doing at all, is worth doing well.”

Now we are not sanguine enough to hope to work an immediate change in our gardeners' mode of growing plants, but may we not expect a more gradual one? Let us look, for instance, at many of the pot plants exhibited at the weekly and annual shows of the Massachusetts Horticultural Society, during the past year. Some were unfit to cumber the back shelf of the poorest greenhouse; others, one would need a ladder to obtain a fair view, or inhale the fragrance of the blossoms; while others again were well grown, beautiful, symmetrical specimens, which delighted all who beheld them, thus conclusively showing that we have many among us who not only know what a truly elegant and beautiful plant is, but also are willing to take the pains and bestow the care necessary to ensure beauty and perfection. It is a mistaken notion that the only object to be attained in raising plants is abundance of bloom, and still more erroneous to suppose that

an ill-grown plant will produce more flowers than one pruned into fine shape, and properly trained and cared for. These errors will in time be overcome, for the true principles of beauty will at length be evident to all, and must prevail.

Many verbenas, which for greenhouse blooming are unsurpassed, are worthless for bedding purposes, the petal of the flower being too thin, or the color fading or changing. Again, some bloom well in the winter, others far better in summer; some form large masses and flower well, others are of straggling growth and poor bloomers; some of creeping, others of upright habit; while a few possess every desirable qualification, and in making a selection all these qualities are to be considered.

We have said that seedlings are produced with great ease; true, nothing is more simple; the seeds must be sown in a hotbed or greenhouse, and the plants, when about an inch and a half high, pricked out in the border; they will grow rapidly and soon show bloom. But to raise a seedling is one thing, to raise a fine seedling far different; of many hundred, raised in the course of the last few years by the writer, not more than half a dozen have been worthy of preservation, and only one (and that produced by chance) really a first class flower. In raising seed much may be done to ensure its quality by planting fine varieties together and allowing them to intertwine, then saving the seed. No fixed rule can be laid down to obtain any desired color, for the seedlings sport infinitely; we can only approximate towards definite results: thus if we plant Annie (white) and Robinson's Defiance (red) together, the seedling will in all probability be pink, and so on.

The flowers are of every color and shade except light blue and yellow, which colors have never been obtained. The writer, some years since, by a curious process of watering and fertilization with a white verberna, obtained a seedling which proved, on blooming, to be of a light straw color; the plant was weak and sickly, and died before cuttings could be taken. Since that time he has tried the experiment often, but never with any successful result.

The qualities of a first class verberna, as laid down, are: *roundness of flower*, without indenture, notch, or serrature;

petals, thick, flat, bright and smooth; the *plant* should be compact, with short, strong joints, either distinctly of a shrubby habit, or a close ground creeper, or a climber; the *trusses* of bloom compact, and stand out from the foliage, the flowers meeting but not crowding each other; the *foliage* should be short, broad, bright, and enough to hide the stalk; in the eyed and striped varieties the colors should be well defined and lasting, never running into each other or changing in the sun.

It only remains now to notice some of the finest varieties, both old and new; those marked first class flowers can be recommended for general culture, while many others, though very distinct and beautiful, are only worthy of a place in a large collection, or interesting to the amateur.

GIANT OF BATTLES.—Flower and truss large, habit good, foliage large, color dark scarlet, with purplish eye; a new imported variety.

DRED.—Flower medium, habit weak, a good bloomer, but of a dull purplish lake color; pretty for variety.

ADMIRAL DUNDAS.—Foliage and habit good, color velvety scarlet; fine.

CELESTIAL.—A strong rapidly-growing variety, the leaves often two inches across; truss large, elongated, forming a fine head; color pink, with darker eye; desirable for its size and color.

MRS. ABBOTT.—Habit and foliage good, truss small, color very dark velvety purple, light eye; fine.

EVENING STAR.—Color dark crimson, with well defined whitish pink eye; growth small; a decided novelty and a very striking flower.

ROSY GEM.—A lovely verbena, foliage and flower of medium size, color rosy lake with light eye; extra fine.

The above are all new varieties, and, as far as tested, have proved of superior merit; but we cannot be too cautious in commending any species of flower which has not been grown for more than one season. As to the relative merits of these verbenas for house or garden culture, we can say little decidedly, but some will doubtless be acquisitions.

BRILLIANT DE VAISE.—Growth fine, color crimson scarlet,

a first class variety ; succeeds equally well in the house or garden, though a late bloomer.

CHAUVIERI.—Of weak habit, color crimson with dark eye ; valuable in a collection.

CLIMAX.—Light, with dark eye ; good.

DEFIANCE, (Robinson's).—A fine old variety, always popular, and one of the best for bedding purposes ; growth strong, color dazzling red ; very fine.

DEFIANCE, (French's).—Similar in growth and habit to the last, but not distinct enough to be considered a variety.

DEFIANCE, (Kurtz's).—Of large strong growth ; color light pink, shading to a dark eye ; truss very large and flat ; fine.

ETOILE DE VENUS.—Similar to the last, but larger and superior.

ANNIE.—Habit strong, foliage medium, color pure white ; truss large, flat, single blooms very large ; a fine bloomer in the garden, but especially adapted to winter blooming ; superior.

IMPERATRICE ELIZABETH.—A pretty little striped variety, which should be in every collection ; truss flat and small, foliage cut and fine, habit creeping ; far better for pot culture than for the garden.

DEDHAM BELLE.—A good pink free-flowering variety.

IPHIGENE.—Purple, with dark eye ; a superior old variety.

UNCLE TOM.—Very dark in color ; pretty for variety.

GEN. SIMPSON.—Of fine growth ; flower and truss large, but not bright in color.

ST. MARGARET.—An old and popular variety ; color crimson scarlet, truss and flower good ; always a free bloomer and well worthy of cultivation.

GLOBY OF AMERICA.—A first class verbena for the garden ; always a mass of bloom ; crimson scarlet.

LORD RAGLAN, (Banks').—Dark crimson, with dark eye ; a fine flower, but of slow growth and a poor bloomer.

LORD RAGLAN, (De Fosse's).—Light pearl color, peculiar ; a decided novelty, good for spring blooming.

MADELINE PARFUME.—Like the last ; fine for the garden, but useless for the greenhouse.

MRS. ARCHER CLIVE.—A first class variety ; color rich carmine, shading to dark eye ; superior.

MRS. HOLFORD.—A fine white, growth strong, fine for garden blooming, but very late in the house ; superior.

MRS. THORBURN.—Bluish purple, white eye.

MRS. WOODRUFFE.—Like Robinson's Defiance, a larger flower, but colors not well defined.

METROPOLITAN.—Fine purple, large truss, vigorous growth, good bloomer in the house, but poor out of doors.

LADY KERRESON.—Blush white, yellow eye, with rosy spot on the upper petal.

WONDERFUL.—Habit strong and good ; color rich plum purple with large white eye, which in the garden is inclined to be ill defined ; in the house it proves superior.

MRS. H. WILLIAMS.—White, weak growth ; superior.

MADAME LEMOUNIER.—Striped, foliage coarse.

EVA CORINNE.—Light pink, shaded to crimson ; fine.

CERULEAN ORB.—Purple, growth good ; extra.

RUBENS.—Color rosy scarlet, growth superior ; fine for garden or greenhouse.

HIAWATHA.—Growth vigorous, truss large, color dark ; a fine variety.

RAND'S BLUE.—More properly a purple, very fine for bedding, but poor in the house ; difficult to propagate.

STANDARD BEARER.—Rich plum purple, with white eye ; a most striking and beautiful variety.

SAMOSET.—A good white.

VICTORY.—Reddish purple, light eye, growth good ; a superior variety.

PRINCE OF WALES.—Shaded scarlet, light eye ; fine.

VICOMPTRESS EMELYN.—Color white shading to dark, well defined eye, a free flowerer ; by far the finest of its class ; very difficult to propagate.

YENNADISSE.—A curiously-marked light variety, a decided novelty ; good for winter blooming.

Much might be said upon the adaptation of the different varieties for masses, rock work, hanging-baskets, &c., but farther remarks must be deferred until another opportunity ; and in conclusion, the practice of growing verbenas as specimens cannot be too strongly urged, for there are few flowers which, if properly grown, would be more worthy of notice, or better repay the attention required.

FLORICULTURAL NOTICES.

390. *EPIGYNIUM ACUMINATUM Klotzsh.* ACUMINATE-LEAVED
EPIGYNIUM. (Vaccinææ.) India.

A greenhouse shrub; growing two feet high; with scarlet flowers; appearing in spring; increased by cuttings; cultivated in loam and sandy peat. Bot. Mag., 1857, pl. 5010.

A brilliant and beautiful species from the temperate regions of the humid Indian Mountains, and gathered abundantly at Khaisa, by Drs. Hooker and Thompson, at elevations of 3-4000 feet, generally growing epiphytically on trees. It was introduced to Europe by Mr. Booth, who found it on the Bhotan Hills, and sent it to Mr. Nuttall, in whose collection it flowered beautifully last spring. It forms a pretty shrub, with long, narrowish leaves, deep green above and purplish beneath, and the flowers appear in corymbs on the stem below the leaves: they are long and tubular, nearly closed at the ends. If it proves of easy treatment, it will be a very great addition to all collections. (*Bot. Mag.*, Oct.)

391. *AGAPETES BUXIFOLIA Nutt.* BOX-LEAVED AGAPETES.
(Vaccinææ.) Assam.

A greenhouse shrub; growing two feet high; with crimson flowers; appearing in spring; increased by grafting; cultivated in sandy peat and loam. Bot. Mag., 1857, pl. 5012.

Another "very beautiful plant, imported by Mr. Nuttall from the Dulpha Hills, bordering on Assam, where it was found growing epiphytically upon trees at an elevation of 2-3000 feet. It has a large tuberous, root-like stem, which adheres by numerous rootlets to the mossy trunks of trees in damp forests. It is an evergreen, upright and erect, with small box-like, bright green leaves, paler beneath, and numerous axillary, bright red flowers, tubular, about one inch long, with five spreading segments, very showy. It grows readily, grafted by approach to a common species of the *Epigynium*. (*Bot. Mag.*, Oct.)

392. *MYE'NIA ERE'CTA Benth.* UPRIGHT MYENIA. (Acan-
thaceæ.) Africa.

A hothouse plant; growing two feet high; with deep violet flowers; appearing in summer; increased by cuttings; cultivated in light rich soil. Bot. Mag., 1857, pl. 5013.

A really lovely stove shrub, "introduced from Western tropical Africa by Messrs. Rollison of Tooting, in whose col-

lection it flowered last spring. Its habit is nearly erect, with lax branches, and opposite, petiolate, ovate, glabrous leaves. The flowers are axillary, of somewhat the shape and general appearance of an achimenes, yellow in the throat and purple on the limb. It is a very fine plant, and, from its general habit, would undoubtedly bloom abundantly turned out into the ground in summer, where its large flowers would be prominent objects of admiration. (*Bot. Mag.*, Oct.)

393. *SABBA'TIA CAMPESTRIS* Nutt. PRAIRIE SABBATIA. (Gentianææ.) Arkansas.

An annual plant; growing a foot high; with rosy lilac flowers; appearing in summer; increased by seeds; cultivated in sandy, peaty soil. *Bot. Mag.*, 1857, pl. 5015.

A rather pretty and interesting annual, with fragrant rose-colored flowers, abundantly produced throughout the summer months. It was first detected in Arkansas, by Nuttall, in his journey through that country, and subsequently seen in Texas by Lindheimer and Drummond, but it was not introduced to England till 1855, when seeds came from Germany. It grows on the open prairies, spangling them with its starry, roseate flowers. It is an annual, easily raised, and, planted out in the border early, it produces a copious bloom. (*Bot Mag.*, Nov.)

394. *SA'L'VIA CANDE'LABRUM* Boiss. LUSTRE SAGE. (Labiataææ.) Spain.

A half-hardy (or hardy) plant; growing three feet high; with mottled purple and white flowers; appearing in summer; increased by division of the roots; cultivated in good garden soil. *Bot. Mag.*, 1857, pl. 5017.

"There may be species of *Salvia* with more gaudy colored flowers in Mexico, but none, perhaps, of all the four hundred kinds is more beautiful" than this, which comes from the south of Spain, where it was found growing at the margins of the vineyards on the Sierra de la Neve, at an elevation of 3000 feet above the sea. It grows three to four feet high, with an erect stem, forming a broad, flattened terminal panicle of variegated or marbled white and rich purple blossoms, which exhale a very powerful odor. The leaves are ovate, much netted, closely rugose, and deep green; stems square, erect, and hairy.

In England it has proved a hardy plant, flowering in July:

it may be hardy with us, but, if not, it will well repay cultivation as a bedding plant like the other *Salvias*; to be turned out of pots into the ground in May; it blooms in July. (*Bot. Mag.*, Nov.)

NEW ENGLAND SHRUBS.

BY WILSON FLAGG.

THE HAZEL.

"Now let us sit beneath the grateful shade,
Which hazels, interlaced with elms, have made."
Virgil's Fifth Pastoral.

THE hazel was a favorite shrub among the Romans, both on account of its valuable fruit and acceptable shade. The *Caduceus*, or Mercury's rod, which he used for composing strife, was made of a branch of hazel, and was presented to him by Apollo, as an emblem of commerce, which is the bond of nations. It was also used by the Roman heralds, in the form of a white staff, when they treated of peace. The Roman fable connected with this shrub renders it probable, that its fruit was a staple product of the agriculture of the ancient inhabitants of Italy, and highly valuable in their trade with foreign countries. Hence the hazel among the Romans, as the olive among the Jews, was regarded as an emblem of peace. This high estimation of the hazel was transmitted to the people of a later period. Hazel walks were common and highly prized in Great Britain, in Queen Elizabeth's time, and in the Dutch gardens of that era. They were valued for their shade as well as their fruit, for their early flowering, and for the little care required for their cultivation.

A dry, sandy loam is the soil in which the American hazels are most commonly found. Along the old roads that pass over those peculiar sandy plains that often accompany the river valleys in New England, the hazels are the most common kind of shrubbery, and are associated with the pitch-pine and the small white birch that grow abundantly in such localities. There are two American species, which are similar in their habits, each delighting in the shelter of fences

and woods, and producing their flowers in April, before the appearance of the leaves. The fertile flowers resemble buds, consisting of bunches of colored stigmas, without petals.

THE AMERICAN HAZEL (*Corylus americana*) is the most common and the largest shrub of the two species. It has rough hairy leaves, of a broad ovate shape, forming a dense mass of light green foliage. It has numerous branches, and averages about four feet in height. The hazels are very beautiful in April, before their leaves are out, by reason of the profusion of brownish aments, containing a mixture of gold, that hang tremulously from their slender twigs. The extreme length and flexibility of these clusters of flowers, renders them extremely graceful, and permits them to be set in motion by the slightest breeze. The buds are seen hanging from the branches during all the winter, ready to burst into bloom when vivified by the first breath of spring. The hazels are among the few American shrubs that do not become tinted in their foliage before the fall of the leaf. Hence their beauty is most apparent in early spring, when they are in flower, and in summer, when the nuts, ruffled with the fringed husk that envelops them, are conspicuous among the foliage with their lighter tints of green.

The common hazel is found in all parts of the United States, growing in a light sandy loam, on the edges of woods and by the sides of walls and fences. In the last situations it ought to be generally encouraged, where its fruit would afford an object for many a pleasant excursion to the children of the village, and divert the squirrels from the cornfields. This may seem to a dull plodding *grubbinal*, a very insufficient motive for planting hazels, or for encouraging their growth. The idea would seem merely ludicrous to him, of doing anything to encourage young people to trespass upon his lands. He could more easily appreciate the wisdom of his brother lout, who destroyed all the wild grapes vines upon his farm, because the boys were in the habit of gathering them!

THE BEAKED HAZEL (*C. rostratum*) which is nearly as common as the other species in Massachusetts, is confined to the northern parts of the American Continent. It closely resembles the common hazel, both in foliage and flowers, but it is a

smaller shrub, and is distinguished from it by the fruit, which with its covering is beaked and bottle-shaped. The nuts grow in large bunches, and many of them are imperfect.

Both of these species are on many accounts worthy of cultivation. They produce a valuable nut without our care; they are ornamental to the fields; they feed the squirrels and protect the birds, and they add a lively interest to natural objects by their spontaneous fruits. Indeed the hazel bushes are associated with many delightful reminiscences of our early days, with squirrel hunts and nutting excursions, on pleasant afternoons in September, just after the whortleberries have begun to fail, and before the fruits of the chestnut and hickory were ripe. The squirrels are commonly very active in looking out for their share of these nuts, and frequently gather a whole field of them, before we are hardly aware of their maturity.

THE WITCH HAZEL, (*Hamamelis americana*.)—The Witch hazel has no botanical alliance with the true hazels, and I introduce it here simply on account of its name, and its superficial resemblance to this family of plants, which probably gave origin to its name. It is a taller and larger shrub than the hazel of our climate, and belongs, like the Cornels, to the fourth class in the Linnæan system of botany, while the true hazels are classed among the amentaceous plants. The witch hazel bears also some resemblance to the witch elm, so celebrated for divining rods, and has been used for the same purpose. Whether this use of it arose from the inference that as it was good for no ordinary purpose, it must therefore be designed for some extraordinary or supernatural use, or whether the slight resemblance it bears to the witch elm might have suggested its usefulness for this purpose, is a point that must be left to antiquarians. Its divining powers might possibly have been suggested by its remarkable habit of producing fruit, buds and flowers in perfection at the same time, and by its flowering in November—habits that might seem to the superstitious to have some connection with witchcraft.

The manner of its growth is peculiar, somewhat resembling the common alder, for which it is sometimes mistaken, and

sending upwards from one root a number of branches diverging outwards, but with an upward curvature. The leaves are alternate and ovate, narrowest toward the stem, and feather-veined. They turn to a sort of a buff color just before the flowers appear, which are yellow, having long linear petals, without beauty, growing in a cluster of four or five in the axils of the leaves. The flowers are hardly conspicuous before the tree has dropped its foliage, and are remarkable only as a curiosity. There is only one species of hamamelis in America. This is commonly found in moist grounds and in more elevated situations than the alder, which delights in fens and bogs. The fruit is a double nut, enclosed in a four parted capsular covering, but it is of no value.

THE PYRUS JAPONICA AS A HEDGE PLANT.

BY PYRUS.

It is often a matter of regret with us that we may not enjoy the delicious perfume of the "hawthorn's blossom" in such hedges as make the gardens and fields of England so famous. The subject of hedges for our climate, though it has been prominently before the public for some time, has not yet had the attention it deserves, nor have we begun to exhaust the materials for inquiry as to the best hedge plant.

If we cannot have a hedge celebrated for its fragrance, we may at least have one very beautiful by employing the *Pyrus japonica* for the purpose. I have seen specimens in the grounds of Mr. Reid, at Elizabethtown, N. J., and at Mr. Buist's, near Philadelphia, and certainly nothing anywhere more handsome when in flower, or more effective, when well treated, for the protective purposes of a hedge.

It will be a costlier hedge than many other plants would make, because the plant, not producing seeds, cannot be so readily propagated,—but though there is not much inducement to our nurserymen to propagate largely of it, yet some of them offer it at \$15 per 100, which, at two feet for each plant, is not so very expensive. Then again it grows slow in

comparison with some others,—but, on the other hand, it grows thick as it ascends, and does not need the loss of several seasons' growth by cutting back to induce a bushy habit, as Osage Orange and some others require. If there were a fair demand for hedging purposes, I have no doubt it might be raised with a profit at \$5 per 100, or less. It increases very readily by cuttings of the roots, which, if taken off in March, cut into lengths of about two inches, and set in a hotbed, would make shoots half an inch long by the first of May, and might then be set out singly into a bed of rich soil, and make good plants the first season. Those who have not the convenience of a hotbed, can strike the roots in the ground at once, but the plants will not be so strong the first year.

Gossip of the Month.

EFFECTS OF FROST ON VEGETATION.—Dear Sir: I was very much pleased with your remarks on my observations in your February No. On the subject I profess to be myself rather a learner than a teacher. I hoped that some other of your observing readers would have added to your suggestions, and, as they have not, I thought no harm could arise from my expressing a hope that they would do so.

There are circumstances continually happening which plainly show that the prevailing theories respecting them do not fully account. I propose to fill up the void by introducing the idea of excessive evaporation, though I am not vain enough to believe that the idea originated with me. If this does not either fully account for the phenomena, we may still inquire what does.

One very cold day in November I saw some six maple trees removed by a party whose reputation for excellence in the theory and practice of his profession is perhaps inferior to none in this city. They were taken up carefully, and each immediately replanted but a few feet from where they stood before. They were about six years old, and had been two years in the last position, healthy and well. Next spring they were dead. Not a great distance from this, I saw last February a party, who wished to widen his sidewalk, employ what we consider an "upstart professional" to take up about one hundred maple trees and set them six feet further back. Two laborers went to work by his directions, and, instead of replanting as they lifted, left them all on the ground, exposed to a sleety wind that was blow-

ing, till they "got through," which was about nightfall. That night there came quite a heavy fall of sleet, which in the morning changed to a clear and heavy frost, which rendered their planting quite out of the question. In their icy clothing the trees remained nearly a week, when the weather moderated; holes were "grubbed" in the ground, and the trees "stuck" in; a rain followed a few days after. The owner was frantic, and on being applied to, I am now ashamed to say, I gave him poor consolation about the lives of them. Yet, when spring came, they all pushed with great beauty and vigor, and I believe he did not lose one. I have no record of the range of the thermometer in these two instances beyond the impression that the temperature was lower after the last instance of planting than after the first, though so much earlier in the season, and I would like to know how these opposite results are accounted for.

Again: I think it is an unquestioned fact that in England, where the air is saturated with moisture, evergreens will withstand a greater comparative degree of cold than with us, where the atmosphere is dry. I have certainly seen the Laurustinus, Sweet Bay, Portugal Laurel, aye, and the Broad and Narrow-leaved Myrtles, twenty feet high, on the south side of a building, stand twenty degrees of frost, without the least appearance of injury. Whoever saw this in our country? and if this is a fact, how is it to be accounted for?

I should like to ask a few more such questions, but hate to impose on your good nature in the matter of space. I still think strongly that we keep our tender evergreens far too dry. A drained and well-manured soil, as in the Dropmore case, is anything but dry. My Deodar, in quite a swamp, is an extreme case; I would not recommend to plant Deodars in such places. I instanced it to show that mine stood well in a wet place, when my friends lost theirs in dry ones. One swallow does not make a summer, and one instance ought not to establish a rule by any means. I saw recently a fine Scotch Fir and a Silver Fir, on the grounds of Mr. Skerritt, near here, on a very dry and poor place, killed during, I will not say by, the late severe winter.

In conclusion, my dear Sir, I frankly confess that I have a design on you. I want to learn something out of you and your correspondents on a subject I have long been interested in, and feel that I do not well understand. I am in the position of a hireling, "dissatisfied with my present situation," and on the "look-out" for a better one. It is quite possible I may "do worse," but mean to try nevertheless.—*Truly yours*, THOS. MEEHAN.

[We should deem it a favor to hear from any of our correspondents in answer to Mr. Meehan's queries. Cannot our friends, Messrs. Barry of Rochester, or H. W. Sargent, who has had much experience in the matter, enlighten Mr. Meehan, and show him the mistake in regard to excessive evaporation.

The reason, we apprehend, why the evergreens in England will stand twenty degrees of frost without injury, while the same cold would seriously hurt them here, is, we think, to be attributed to the absence of the hot sun and cooler and damper atmosphere which prevent the rapid thawing that

takes place in our climate. It is very plain, we think, that a plant which will stand one good freezing without harm, may just as well be frozen one year, or one hundred years, without any additional injury. It is the thawing out by the heat of the sun that so cuts up and destroys the plants. We have closely observed the action of frost and heat the past winter, and at another time will enlarge upon the subject, which is really one of great importance. In the meantime we should be pleased to have the views of our correspondents.—Ed.]

THE LOGAN GRAPE.—In my communication describing this grape, which appeared in your January number, I intimated that it might possibly prove a variety already known to cultivators by some other name, at the same time expressing a willingness to yield to the claims of priority, should such prove to be the case. I did not, however, expect to be so soon called upon to drop the newly-acquired cognomen, and adopt in its stead the brief and euphonious one of the "Wild Wine Grape of Indiana," which the discovery announced by a correspondent from Sharon, Mass., in your number for the current month, seems to demand. I would beg to suggest, however, that perhaps it would be well enough to defer for a brief period the proposed change of name, until it can be ascertained, by something like satisfactory evidence, that the gentleman's claim is well founded. I do not say that the Logan is not the grape your correspondent claims it is, or that it is not indigenous to the region indicated—but I do say, that it will require much more satisfactory proof than is afforded by a written description of a fruit by one person and the recollection of one seen perhaps years before by another, to satisfy horticulturists that the two are identical; and until conclusive evidence of identity is adduced, I feel like insisting upon adherence to "Logan" as the proper appellation of the grape I described, and hope that when the gentleman furnishes his "cord of cuttings," they will be properly labelled, and not sent out under a wrong and assumed name. I am a little sensitive on this point, because, from a similar conclusion hastily arrived at on insufficient evidence, another grape, with which my name is sometimes identified, (the Delaware), suffered severely in reputation for a number of years, and until time exploded the fallacy and vindicated its character.—*Yours truly, A. THOMSON, Delaware, O., Feb. 27, 1858.*

EARLY AND LATE PEACHES.—Mr. Editor: Will you please to inform me, through your Magazine, which of the very early peaches you consider the best, taking into consideration the growth, hardiness and productiveness of the tree, and the quality of the fruit. I also wish to inquire which of the late peaches is most profitable for the market. The Late Crawford is not sufficiently productive to be profitable. What do you think of the Meriam peach, described in Cole's Fruit Book? By answering the above inquiries you will greatly oblige H. G.—*Lunenburg, Oct. 1857.*

[The best peaches for general cultivation are the Early Crawford, George IV., Grosse Mignonne, Late Crawford, Cutter's Yellow, Coolidge's Favorite, Early York, and Oldmixon.]

The Late Crawford is a good late peach, though we prefer the Oldmixon, which is a fine fruit. We know nothing of the Merriam.—Ed.]

SULPHUR FOR INSECTS.—I notice in the April No. of your Magazine Mr. Wight's criticism of Mr. Parnell's article in the Country Gentleman of Feb. 20, 1858, on the effect of sulphur applied to the Hickory trees in my park. About twelve years since, many of these trees began to die, at first ten or twelve annually; the yearly number increased until sixty-three were lost in a single season. The following spring, 1853, we adopted the course stated in Mr. Parnell's article; that year about twenty died, next year about ten, in the succeeding year only three or four, and last year not one. When the disease first appeared, there were about 1200 hickory trees in the park, from 30 to 100 years old, of which about 300 have died. The disease would first be seen on the topmost branches, which, in many cases, we caused to be cut off, but without benefit, the tree invariably dying in a year or two. After the sulphur was applied, the same course was pursued; since the first year, (1853,) none so treated have died, but are now thrifty. The article applied was *Flor* sulphur, not *Roll* sulphur, as in Mr. Wight's case. If it was not the sulphur which destroyed the insects which caused the disease, what was it? I prefer the fact to Mr. W's theory.—D. F. MANICE, *Oatlands, Queen's Co., L. I., April, 1858.*

THE CATAWISSA RASPBERRY.—This new ever-bearing raspberry seems deserving of more attention by our cultivators. From a statement we have of Mr. Joshua Pierce of Washington, D. C., who introduced it to notice, it is a most prolific and perpetual bearer. Mr. Pierce is making every possible effort to increase the stock, with the hope of being able to meet the growing demand, and at prices that will enable every one to possess this excellent fruit. We understand Mr. Pierce has raised the fruit in such quantities that he has sent to the Washington market to the extent of upwards of sixty quarts a day, through September up to the 20th of October. He intends to cultivate it still more extensively for that purpose. In Alabama, it ripens its second crop produced on the young wood from early in July to near December, so that they can have raspberries from six to seven months of the year,—a cheap and delicious addition to the dessert.

Societies.

HARTFORD COUNTY HORTICULTURAL.

I enclose a list of the officers of our Society, elected at the annual meeting April 8, for insertion in your valuable Magazine.—*Yours respectfully,*
THOS. R. DUTTON, *Cor. Sec. Hartford Co. Hort. Soc.*

President—Gurdon W. Russell, M. D.

Vice Presidents—J. S. Butler, M. D., H. W. Terry, Hartford; Henry Mygatt, Farmington; Wm. F. Comstock, East Hartford; N. W. Stanley, New Britain; Norman Porter, Berlin; Sheldon Moore, Kensington; Sal-

mon Lyman, Manchester; E. A. Holcomb, Granby; H. A. Grant, M. D., Enfield; S. D. Case, Canton; T. C. Austin, Suffield; Howard S. Collins, Collinsville; B. F. Seward, Southington.

Corresponding Secretary—Thomas R. Dutton.

Recording Secretary—Mason C. Weld.

Treasurer—P. D. Stillman.

Auditor—Seth H. Clark.

WISCONSIN FRUIT GROWERS' ASSOCIATION.

The annual meeting of the Wisconsin Fruit Growers' Association was held at Milwaukee, Feb. 9. The following is the list of officers elected for the ensuing year:—

President—A. G. Hanford, Waukesha.

Vice Presidents—Col. H. Crocker, Milwaukee; D. I. Powers, Madison; D. Mathews, Burlington.

Secretary—Charles Gifford, Milwaukee.

Treasurer—C. C. Olin, Waukesha.

Ex. Com.—H. J. Starin, Whitewater; I. C. Brayton, Astalan; Thos. P. Turner, Waukesha.

Messrs. Powers and Gifford were appointed a committee to procure the passage of a law, similar to that of Massachusetts, for the protection of fruit trees, and trees planted for shade or ornament. Messrs. Olin, Starin and Crocker were appointed a committee to ask an appropriation from the State to promote the objects of the association.

Massachusetts Horticultural Society.

Saturday, Jan. 2, 1858.—The annual meeting of the Society was held to-day.

The retiring President, Hon. J. S. Cabot, took the chair, and in a very interesting speech, in which he alluded to his long connection with the Society, and more especially to his official position during the past four years, introduced Mr. Josiah Stickney, the President elect. Mr. Stickney, who offered a few pertinent remarks, referred to the condition, the objects, and the prospects of the Society, sympathizing with the members in the retirement of so capable a president, and promising his aid and coöperation in everything which would advance its interests and extend its usefulness.

A committee of three, consisting of Messrs. Walker, Wilder and Cabot, was chosen, to take into consideration the address of the President, and report.

Dr. Wight moved and it was unanimously voted that a piece of plate, of the value of \$150, be presented to the Hon. J. S. Cabot, for his able services as President of the Society. Messrs. Wight, C. M. Hovey, and W. R. Austin, were appointed to carry this into effect.

The thanks of the Society were also voted to the retiring Vice Presidents for their services in behalf of the Society.

On motion of Mr. S. Walker, it was voted, that a piece of plate, of the value of \$100, be presented to Dr. E. Wight, for his long and valuable services as Chairman of the Fruit Committee.

C. M. Hovey, Chairman of the Library Committee, submitted a report which was read and accepted, with an appropriation of \$150 for the year.

Mr. Walker, from the Finance Committee, submitted the annual report, as follows:—

RECEIPTS FOR THE YEAR 1857.

Balance in the treasury,	-	-	-	-	-	\$168	94
Dividends from stock,	-	-	-	-	-	981	00
Rents of store, hall, &c.,	-	-	-	-	-	2520	31
Mount Auburn Cemetery,	-	-	-	-	-	4585	67
Annual Exhibition,	-	-	-	-	-	1372	50
Assessments,	-	-	-	-	-	600	00
Cash borrowed,	-	-	-	-	-	1379	50
Miscellaneous receipts,	-	-	-	-	-	195	25

11,803 17

PAYMENTS FOR THE YEAR 1857.

Taxes, interest and insurance,	-	-	-	-	-	934	43
Premiums and gratuities,	-	-	-	-	-	2343	00
Salaries,	-	-	-	-	-	500	00
Printing, binding, &c.,	-	-	-	-	-	328	99
Painting, repairing, &c.,	-	-	-	-	-	273	75
Mechanics and miscellanies,	-	-	-	-	-	953	37
Annual Exhibition expenses,	-	-	-	-	-	2382	68
Paid mortgage and cash borrowed,	-	-	-	-	-	2400	33
Invested in Railroad stocks,	-	-	-	-	-	1289	50
Cash on hand,	-	-	-	-	-	397	12

11,803 17

The Committee of Arrangements for 1858 was chosen as follows: F. Lyman Winship, Eben. Wight, J. S. Cabot, W. R. Austin, C. M. Hovey, W. C. Strong, P. B. Hovey, D. T. Curtis, Samuel Walker, A. C. Bowditch, F. Burr, Jr., E. S. Rand, Jr., R. McCleary Copeland.

The following persons were elected honorary members:—Hon. James Buchanan, and Hon. Charles Sumner.

Corresponding members—H. W. Fuller, Boston; C. Wentworth Dilke, London; Rev. T. D. Anderson, Roxbury, and S. Kneeland, Jr., Boston.

A committee of five was appointed to consider the subject of the revision of the By-Laws. Messrs. Jos. Stickney, E. S. Rand, S. Walker, C. M. Hovey, and W. R. Austin, were appointed the committee.

Adjourned to Jan. 9

Jan. 9.—An adjourned meeting—the President in the chair.

The President asked to be excused from serving on the Finance Committee, and the Hon. J. S. Cabot was chosen in his place.

It was moved that the sum of \$75 be voted to E. S. Rand, Jr., for his services as Chairman of the Flower Committee for 1857.

Capt. Austin made the following report from the Committee to settle with Mount Auburn:—

Total sales of lots, - - - - -	\$20,598 68
Deduct expenses, - - - - -	1,400 00
	<hr/>
	\$19,198 68
Society's proportion of one quarter is - -	4,799 67

Which has been paid in to the treasurer.

The thanks of the Society were voted to Josiah Bradlee, Esq., for his liberality in loaning to the Society money upon mortgage for the purchase of the property.

E. S. Rand, Jr., offered a vote in relation to the repeal of the law for the protection of the robin. This elicited much discussion, and also the following paper, which was read by the author, Prof. J. W. P. Jenks. We copy entire.

Mr. President, and Gentlemen of the Society—

It will be remembered that the Hon. Mr. Walker suggested, at our December meeting, the propriety of memorializing the Legislature upon the subject of removing the restriction upon the destruction of the Robin, (*Turdus migratorius*,) on account of its injurious habits as a great fruit-destroyer. Knowing that the robin has many and *dear* friends, of which I confess myself one, I determined to prepare a paper upon the subject, to be read at our first January meeting, but deferred any remarks then for the want of time.

I have made the habits of birds a particular study for years, but have, perhaps, taken too much for granted the advantages derived from the foraging of the robin, as compared with the disadvantages, and frankly acknowledge that on the day of the December meeting, I found myself strongly prejudiced in favor of the bird, notwithstanding he gets much the largest share, every year, of six splendid cherry trees in my front yard.

Knowing too that probably seven tenths of the people generally would favor the protection of the bird, and that therefore any petition to the Legislature must be a *memorial*, embodying the absolute facts in respect to the food of the bird *throughout the year*, I first examined all our works on Ornithology and obtained from them the very unsatisfactory information that the bird lives on "insects and fruit, particularly cherries and currants." This information being so general as to be utterly valueless for our purpose, I next tried our farmers, and found them about equally divided upon the subject; such as have fruit trees of the berry kind condemning the bird as a nuisance, and others upholding it as a benefit, so that I was strongly reminded of Audubon's drawing of this bird, in which he represents the male as feeding the young with a caterpillar, and the female at the same time with a cherry. When it is remembered, however, that the cherries, strawberries, currants, raspberries, &c., are to be found only during a brief portion of the year, the drawing would seem to give us an argument in favor of the bird, inasmuch as even in fruit-time it does not wholly become non-insectivorous.

Regarding this *second* means of information as no less unsatisfactory for our purpose, I was left to personal and specific observation of its habits, according to the following plan, viz.: to secure specimens *daily*, or at least *weekly*, throughout the year, and carefully analyze the contents of the crop, and then, after twelve months, I shall be able to defend or reject the bird with reliable data. I propose to tax myself with such an investigation, if deemed desirable, and to secure the services of two other naturalists in different parts of the State, that by a comparison of our investigations we may plead for or against the bird in every part of the State.

In pursuing such an investigation I should hope to identify the insects and fruit or buds found in the crop, and, by a little mathematical calculation, approximate a conclusion in reference to the number of injurious insects a single individual may destroy, as compared with the amount of fruit.

Such, gentlemen, are my views upon this subject at the present time, and unless some one of our number can sustain a petition to the present Legislature with such specific information as I have just alluded to, I fear the credit of our Society will suffer in respect to its zoölogical reputation, for the rigid system of investigation inaugurated by recent naturalists forbids all theorizing about the operations of nature, and demands a simple statement of facts, sustained by a course of most scrutinizing observation.

If these remarks are supererogatory on account of the previous investigations of the Society, you will please to remember that I have just entered your fraternity, and am almost entirely ignorant of what specific subjects may have engaged your attention.

All which is respectfully submitted by

J. W. P. JENKS,
Professor of Entomology.

After considerable discussion the vote was laid upon the table, and the following committee appointed to report upon the subject at a future meeting, viz.: Prof. Jenks, C. M. Hovey, and E. S. Rand, Jr.

Adjourned one month to Feb. 6.

Feb. 6.—An adjourned meeting—the President in the chair.

On motion of S. Walker, it was voted, that Messrs. Walker, C. M. Hovey and E. S. Rand, Jr., be a committee to report resolutions upon the death of Zebedee Cook, a former President of the Society.

Messrs. J. S. Cabot, S. Walker, C. M. Hovey, E. Wight, and J. Breck, were appointed a committee to report upon the Preservation of Fruits by Curtis's new Refrigerator.

Adjourned to March 6.

March 6.—An adjourned meeting, Vice President Breck in the chair.

The Committee of Arrangements reported that they had fixed the time for holding the next annual exhibition on the 21st, 22d, 23d and 24th of September next.

C. M. Hovey, from the committee appointed for that purpose, presented the following Resolutions upon the death of Zebedee Cook:—

Whereas, This Society having learned with the deepest regret of the death of Zebedee Cook, one of its founders and its second President, and being desirous of placing upon its records not only a recognition of his

early and assiduous labors in urging and promoting its organization, but a full appreciation of his disinterested services in its behalf: therefore,

Resolved, That we recall, with the most grateful remembrance, his devoted and unceasing efforts in the cause of Horticulture and Rural Art, and his untiring industry in promoting and advancing all the objects of this association.

Resolved, That although the Society has, for several years, been deprived of his presence and counsel by his removal to a sister State, from whence he had so recently returned to pass his last days among us, we entertain the highest regard for his many virtues, and acknowledge with gratitude our indebtedness for his past services.

Resolved, That in this bereavement we tender our warmest sympathies to the family of the deceased.

Resolved, That these resolutions be entered upon the records, published in the journals of the day, and a copy be transmitted by the President to the afflicted family.

The resolutions were prefaced with appropriate and interesting remarks by Mr. Hovey, upon the services and life of Mr. Cook, and a copy was requested for insertion in the papers.

A package of seeds was received from the Patent Office for distribution. Mr. C. M. Hovey offered some remarks in relation to the wholesale distribution of many worthless seeds, and old kinds under new names, at great expense to the country. Other members seconded his views, and a committee of five was appointed to memorialize Congress in relation to the matter, and put a stop, if possible, to such a useless expenditure of money. Messrs. Cabot, J. W. P. Jenks, E. S. Rand, Jr., W. R. Austin and B. V. French were appointed the committee.

B. F. Monroe was elected a member. Adjourned two weeks to March 20.

Horticultural Operations

FOR MAY.

FRUIT DEPARTMENT.

APRIL was a very favorable month for all gardening operations; cool, without severe frosts, and moist without heavy rains; a better time for carrying on all the operations of trenching, planting, &c., was never experienced. More, we believe, has been accomplished thus far, where there was work to do, than up to the first of June last year. The season is just about one week earlier than last year. Cherries will be in flower about the 8th, and last year they were in bloom on the 13th. *Forsythia viridissima*, one of the most splendid early flowering shrubs, now in bloom, April 28th; last year, May 8th.

GRAPE VINES in the early vinery will now begin to color; keep up a good temperature; air freely in good weather, and still continue to damp

down the house ; stop all laterals when they become too crowded. Vines in the later house will now be setting their fruit ; give less air till the berries are the size of peas, and less water in the house ; after that, treat as recommended for the first house. Vines in the cold house will soon show their buds, and will be in flower before the end of the month. Vines in the open ground should soon be tied up neatly to the trellis, top dressed, and put in good order.

PEACH TREES in pots, now swelling their fruit, should be watered rather liberally, and syringed often to keep down the red spider.

CURRENTS, RASPBERRIES, &c., should be pruned, if not already done, and the ground be manured and dug. Stake the raspberries as early as possible.

STRAWBERRY BEDS should now be put in order ; thin out old beds, and dig in manure between the rows. New beds may be planted now.

FRUIT TREES of all kinds should be pruned, taking advantage of every opportunity to complete the work, and manure and dig the borders. Espalier or wall trees should be neatly pruned and trained.

PEAR AND APPLE TREES may be grafted any time during the month, with good success.

FLOWER DEPARTMENT.

The warm sunny weather of April has given all indoor plants a rapid start, and unless they are looked after, they will soon become too crowded ; advantage, therefore, should be taken of all spare frame-room to get out as early as possible all half-hardy things. Heaths, Cinerarias, Laurustinuses, Roses, Violets, &c., will do much better if at once removed to the latter. This will give room for the Japan Lilies, Gloxinias, Achimenes, Fuchsias, &c., which are to keep up the beauty of the house. Repot all plants that require it, without waiting for any particular season to do the work. The best time is when it is needed.

CAMELLIAS will be growing rapidly, and a slight increase of temperature will greatly benefit them now ; keeping them well syringed and watered at the roots. Inarching may still be done.

FUCHSIAS, for fine specimens, will need frequent shifts ; do not allow them to get pot-bound.

PELARGONIUMS will soon be in their glory ; keep the branches neatly tied out ; place in the coolest and most airy place, near the glass as possible ; fumigate for the green fly, and water with weak guano. Plants intended for late blooming may be shifted if they require it.

ROSES, in pots, may be planted out in the ground the last of the month.

ACHIMENES, GLOXINIAS, &c., should be repotted, and have a good place in a warm, rather close house.

CHRYSTANTHEMUMS should be propagated yet ; those well rooted may have a shift into larger pots.

ORANGE TREES should have good treatment now ; repot if they need it, and water with liquid manure.

VERONICAS should now have a shift into larger pots ; top the shoots and tie them out carefully, if large plants are wanted.

EPACRIS and **HEATHS** should be put in a frame, to harden off before the hot weather. Repot every plant that needs it. Cuttings may be put in now.

JAPAN LILIES should be shifted as soon as the pots are full of roots.

BEGONIAS should now be placed in the warmest part of the house, in a shady place.

STEPHANOTUS, and other twining plants, should now be shifted into their blooming pots.

PLANTS of all kinds, intended for decorating the greenhouse in summer, should be looked after and have good treatment; and those intended for the open air should not be neglected, as is usually the case, after their bloom is over, but receive a due share of attention, preparatory to moving to their summer quarters.

FLOWER GARDEN AND SHRUBBERY.

If advantage has been taken of the good weather, the flower garden and shrubbery will now be in pretty forward order. If not yet attended to, do not neglect it. Our directions last month need not be repeated; a reference to them will show what ought to have been done.

TULIP BEDS will now be coming forward, and by the 25th of the month will probably be in bloom. Prepare to shade the flowers, if they are fine ones, as their beauty is preserved a long time.

CARNATIONS and **PICOTEES** should be got out as early as possible, as the earlier the stronger they bloom. Sow seeds now for next year's stock.

VERBENAS, **PYRETHRUM**, and other half-hardy plants, may be set out immediately for early bloom; to be succeeded by another planting later.

DAHLIAS will do to plant any time after the 15th of the month.

GLADIOLUSES, **AMARYLLISES**, **TIGER FLOWERS**, &c., may be planted now.

HERBACEOUS PLANTS may yet be removed with good success.

ANNUALS, of all hardy and half-hardy kinds, may now be planted; tender kinds should be forwarded in frames, as the weather will be too cool to expose them till the last of the month.

VEGETABLE GARDEN.

All early made hotbeds will now need a good lining of fresh manure to keep up the temperature. New ones should also be made for a semi-annual crop of such things as melons and cucumbers.

Egg PLANTS and **TOMATOES** may have a shift into larger pots, if fine strong plants are wanted.

SEEDS of all hardy vegetables may be got in as early as possible; squashes and tender ones later in the month.

SWEET HERBS, of all kinds, may be brought forward in the hotbed, and then put out in the open ground.

SOW LETTUCE, **RADISHES**, &c., for a succession.

CELERY should be planted immediately.

PLANTING SEEDS of all kinds should be completed this month.

FOREST TREE CULTURE.

IN a country naturally so rich in ornamental trees that many of our finest species are the pride and ornament of the parks and gardens of Europe, it may appear superfluous to direct attention to their cultivation. Spread over the whole extent of the United States, as many of them are, and growing in abundance where the pioneer has not yet appeared with his ruthless axe, often within the boundaries of many of our suburban towns, they are so well known that they are deemed too common to introduce into our plantations, and are discarded for the far-fetched and dearer-bought, but not more beautiful, objects of foreign growth. For our wide-spreading and gracefully-branched Lime, we substitute the compact and prim-looking English species; for our noble and dark-hued Black Spruce, we substitute the Norway; for our White Pine, the Scotch Pine; for our magnificent Tulip Tree, the Horse-chestnut; and for our picturesque American Larch, the symmetrical Scotch. Because they grow in abundance almost within sight of many a country house, they must not grace our lawns, ornament our avenues, nor shade our parched and dusty streets; a superabundance of our well-known native trees would at once show that we are not familiar with the rare foreign trees, which make some neighbor's garden so attractive and *recherche*.

But notwithstanding we have so many well-known forest trees of great beauty, there are others less extensively distributed which are not so familiar as many foreign species, and whose merits are quite as great. Scattered less profusely over the country, they are not often seen, or, if seen, they are not distinguished from others, except by the real lover of nature. Such are the Tupelo, Nettle Tree, Hop Hornbeam, Canoe Birch, Striped-barked Maple, &c. These are all elegant trees, some of them the most conspicuous our forests can boast.

We have, however, no dislike to any beautiful tree, whether foreign or native; all are equally admired by us. What we

desire to see, is a due appreciation of our indigenous species, which are equally if not more beautiful than others. Every hardy tree, no matter from what country it comes, is a valuable addition to our gardens; but where the extent of the grounds will admit, all our native kinds should be represented, for they will not suffer by comparison with others.

But our object is not so much to describe the peculiar characteristics or merits of any particular trees, as to invite attention to the importance of their more extended cultivation. The perusal of an Essay in the Transactions of the Norfolk County Agricultural Society, by our correspondent the Rev. J. L. RUSSELL, "On Artificial Planting, its Importance and Benefits," has afforded us so much pleasure that we embrace an early opportunity to lay before our readers a portion of his valuable and interesting paper. Forest tree culture has received comparatively little or no attention in this country. What has been done has been accomplished mostly by gentlemen and lovers of beautiful trees, more as a source of pleasant recreation than from any expectation of profit. Even our nurserymen, who should certainly raise their own trees, import a great portion of those they offer for sale. Within a few years, the offer of liberal premiums, by some of our Agricultural Associations, has awakened an interest in the subject, and some plantations have been made which will soon show the value of the experiments. On Cape Cod, several acres have been sown with pines, and some very handsome young trees have been most successfully raised. But they are on so limited a scale, compared with the importance of tree culture, that they hardly are an exception to the general apathy in regard to their cultivation.

Some years ago, the late Gen. Dearborn, to whom every cultivator is deeply indebted for information in every department of tree culture, both fruit and forest, recommended the raising of forest trees, and published in the New England Farmer a series of articles, giving minutely all the directions as regards sowing the seed, planting, transplanting, &c. He had successfully raised thousands of our various ornamental trees, and has left behind him a fitting memento of his labors in the magnificent belt of Rock maples which he planted on

the borders of Mount Auburn Cemetery, around what was intended, when the Massachusetts Horticultural Society purchased the grounds, to form an experimental garden. They have now attained the height of thirty or forty feet, and at every season of the year, in winter or summer, are highly ornamental; but more particularly of an October afternoon, just before the sun reaches the horizon, the splendor of their fawn and amber tinted foliage, with the golden beams playing through it, resemble more some fairy scene than anything real. So straight and completely branched from the ground up are many of them, that they form gigantic golden plumes. Compare these trees with the saplings pulled from the forest, pruned into bare poles, disfiguring many streets and grounds, and note what forest tree culture will accomplish.

Another instance of what planting will effect we once saw at Roxbury, on the grounds of the late John Lowell. While on a visit to this pioneer in gardening in 1837 or 1838, with Mr. A. J. Downing, Mr. Lowell pointed out to us, with evident pride, oaks, maples, ashes, &c., fifty and sixty feet high, which were planted by him when he first commenced ornamenting his grounds many years before.

In fact, most of the large and beautiful villa residences around Boston, which make her suburbs so attractive, owe all their interest and beauty to the growth of the forest trees, which were either raised from the seed, or were planted when quite small by the proprietors, who, at that early day, had none of the nurseries to resort to which now furnish trees in abundance, and in far greater variety.

Our remarks refer, in the main, to tree planting for ornamental purposes. Yet Mr. Russell takes up the subject in the matter of profit, and appeals to our farmers to resort to the growth of trees for enhancing the value of their property,—for producing wood and timber,—for giving shelter to their crops, and for cultivating a taste for the ornamental,—beautifying their homes, and rendering them attractive and cheerful; places the memory may fondly linger upon, as, in riper years, the son or daughter looks back to the period passed beneath the parental roof.

MILLIONS of trees are yearly planted in Great Britain; they

do not estimate them by hundreds or thousands, but millions, and if planting is profitable there, why should it not be with us? Already the hand of the improver, the planner of paper towns, is laying waste all the forests upon our Atlantic coast. Our timber and wood come from remote places, greatly enhanced in value by the large expense of transportation. Why should not the thousands of acres of land lying idle be planted with forest trees? In twenty years an acre would be more valuable than a small farm. Barren tracts may be covered with the larch and Scotch pine; better lands, with the oak and maple. The rapidity with which young plantations grow is truly astonishing. The only thing is to set about the work immediately.

Plant one acre, or, if not an acre, half an acre, or even a rod; it will soon be seen that the trees are spoiling for want of space and must be removed. Then distribute them over some old pasture, or by the side of the road; put them in everywhere, except in arable fields, and if they grow too fast or too thick cut them down—they will all make good fire wood. We have found it more trouble to keep plantations of seedlings *thinned out* than to raise the trees. Seeds of all the principal forest trees may be purchased at the seed stores, or, if they cannot, half a day spent in gathering them from some neighboring trees will not be time lost. A pocket full of acorns, gathered under any old white oak, and a pointed stick to make a small hole in the ground an inch deep, will give a crop of oaks even without any further trouble. The secret is to begin at once, and if there is the least latent love for a tree or plant the growth of tender seedlings will so awaken that love that no further incentive will be necessary to persevere in the work.

We can scarcely do justice to Mr. Russell's Essay in the room we have to spare, but must content ourselves with the most interesting parts of it:—

“Artificial planting and culture of forest trees has been left too much to the man of fortune or to those of decided artistic tastes. By want of judicious observation on the part of otherwise practical people, a great many serious blunders

have occurred. The proper season to sow the seeds of forest trees, the proper modes of raising the seedlings, the proper time to transplant them, the soils adapted to them, have been too often the tediously slow work of experience, and hence repeated failures. Many farmers are, therefore, deterred; but would they take some slight notice of, or read some treatise on the subject, such errors would be few. Much of this work could be done by the junior members of the family, who are to reap the most benefits hereafter. And then, again, from what the observation of many years has shown, I am convinced that there is no farm so barren that could not be immensely improved by attention to tree planting. There is no reason why farmers should not be arboriculturists as well as the men of fortune and of taste. Why leave this branch of industry and profit to them; and why not learn from their experiments what costs the farmer nothing, but brings him in sure results of profit? True, every farmer is interested in orcharding, but arboriculture belongs to him likewise. Indeed, the arboricultural art addresses him rather the more of the two pursuits, and he might better plant shade and timber trees than fruit trees. The orchard, in its wider sense of a place for fruit growing, belongs rather to the horticulturist than to the farmer. The usual and necessary avocations of the farm cannot afford the requisite time for care of the choicer apples, pears and peaches, which are the best fitted for the market, as the market now-a-days is expected to be; and while the insect foes have so much increased in numbers and in their ravages, more demand still is made of the farmer's time to keep them in check. A few trees could supply the family; but to raise market fruit has become an occupation of its own. Even the apple trees should have no ordinary care, would they pay well and make a return of all their possibilities. A very few acres of land, kept in excellent heart by careful manuring, by judicious pruning, by washing the trunks with alkali to destroy vermin, in fine, by the art of fruit culture, would, if near an available market-town or city, yield a greater return than farms of much wider area. And these few highly cultivated acres would afford the best sorts of apples, the choicest kinds of

pears, and the most delicious cherries; yet all these are the results of a horticultural rather than an agricultural department of industrial toil. I repeat, then, that trees requiring such attention do not belong to the farmer, for he could not spend the time, bear the cost, nor devote the attention, if he depends, as it is expected he will, on his Indian corn, his grass and root crops, with other field produce, for his living and business. He cannot afford "to serve" two "such masters;" one or the other must receive his chief service. All this reasoning does not apply to arboriculture; and a well-regulated farm, now-a-days, seems to look toward the artificial rearing of forest trees, as well as toward their protection for the future increase of its value. In some sections of Massachusetts, forest tree planting, I am sure, would be very important; and in every instance there are valuable species of such trees, which could be readily introduced without any great outlay of cost or trouble. * * * *

Massachusetts farms may be divided into four or five great divisions of the soils found upon them. These may be thus stated, viz. :—

- 1st. Light, sandy soils.
- 2d. Gravelly or thin soils.
- 3d. Rocky soils, much broken by ledges.
- 4th. Boggy or peat meadow soils.
- 5th. Stiff, clayey, loamy soils.

On these different soils particular kinds of forest trees thrive best. Observation can easily point out ways for using all these to the best advantage for artificial plantings. Often what were once timber or woodlands have become, by accident or mismanagement, sterile and unproductive; and for such places this planting of trees might be prudent as well as wise. It is no uncommon thing to find on the same farm acres of "good for nothing" land, but still capable of becoming good for something. A little extra attention to these may turn them to some valuable account. * * * *

A great many folks, and it is not confined to the farming occupation, value a tree if it can be compelled to bear something to eat. They would graft their elms with pears, their larches with apples, and their chance shade trees with plums

and peaches. But failing in this impossibility, they regard such pleasures as encumbrances, and would be glad to have them away at shortest notice, preferring a poor cider apple tree to a splendid button-wood or elegant horse-chestnut. I allow that the mouth and the palate are valuable organs, and so is the stomach; indeed, without them we could not well exist under the present arrangements of life. But we should never forget that "man cannot live by bread alone," and that the mind, heart, and the higher natures claim our heed also. Were we created with more decidedly animal instincts, those prudent and careful considerations would be more commendable; but we are "living souls," and the soul of man and his truest spirit exhibit themselves most correctly in rising above grosser thoughts. And as such was intended in the Creative plan, what would it profit to "gain the whole world and lose the soul?" * * * *

A farm that has the misfortune to have fields once cultivated, but afterwards overspread by drifts and heaps of loose sand, need not allow further increase of so dire an evil. To say nothing of the probability of growing the white birch (*Betula populifolia*) upon it, the pitch pines (*Pinus rigida*) and white pines (*P. strobus*) and even the red pines, (*P. resinosa*,) sometimes called the Norway pine, can be most readily planted and raised. I have seen such fields, in part, redeemed by this process; and a very few years were found to be sufficient to clothe with perennial greenery, these waste and sterile sand drifts. All sorts of evergreen trees and shrubs should be taken up for transplanting after they have begun to grow, and the new growth should be three or four inches long. With pine trees, this occurs about the middle of June. I am familiar with an instance in which nearly an hundred pitch pines and a few white pines were planted out by a few hours' labor, and which all grew with remarkable celerity and vigor. By and by, the loose sand became bound together by their roots, and its surface so deeply carpeted by its dry and persistent needle-shaped leaves, as to stop any further drifting or changes. The pitch pine has been successfully planted out at Nantucket, where the bleakest winds render almost every tree-growth a difficult matter; and if

these experiments were instituted by some public measures, it would not be long before that island would be clothed again with a thick forest growth, such as were roamed in by its Indian tribes before the white man came and stripped its leafy honors. I was once shown a single red pine tree, which stood on the edge of an old rye field, from which, in about forty years, a respectable forest of its progeny had sprung up around it, and rewarded the careless spirit of letting it alone in its work, by its industrious yearly increase.

The white birch has been incidentally mentioned among the kinds of trees well fitted for a poor soil. According to my observation, it seems best adapted to the second division, viz.: to gravel and gravelly ridges. This tree is, usually, near the sea-coast, of a small size, but still it is of economical value. It grows very fast. A friend, who has much of it upon portions of his farm, assures me that he considers it as one of his best crops. He cuts, for market, the young stems down to the roots, as often as they are of sufficient size for hoops of nail casks. I have repeatedly noticed that white birches spring up very thick and readily from seeds self-sown by the winds, upon the quicksand often found under those small, gravelly hillocks, when they have been removed to fill with their material some lower spot, or in making embankments. The same facility of growing is noticeable in the old cart-paths and in grassy pastures, where the sod has been abraded and the soil laid bare. The process of vegetation on soft, quaking quicksands is curious in the extreme. In the course of the first year, mosses appear; then, on the next year, the little seedling birches; then a bulrush or two; by and by some grasses, the moss growing thicker and more abundant, but the young birches outstripping every other form and invading the newly exposed soil like a conquering host. It is evident, from these facts, that what Nature thus easily and readily does, art could imitate, and that unlimited supplies of seedlings could be raised with as little trouble as we employ in sowing carrots on better lands. The white birch, small as it grows, is considered a very valuable fuel for the stove, if cut and suitably seasoned; and what trifling amount of labor would plant coppices of the tree on every

sand pit, gravel bank and other encumbrances of the farm. Several kinds of the oak grow naturally upon gravelly spots; and this tree is not difficult to transplant, especially if raised from the acorn in the seed bed. When we look at an old oak tree, we compute the long years of its probable growth, but we are not aware how fast it really grows from year to year. I know respectable oak trees, of the third and fourth generation, from young seedling plants imported for the pleasure grounds of a gentleman, who lived to see the acorns of their posterity to that descent, actually five generations, from his seedlings imported years before in flower pots, so small were they then!

The artificial planting of forest trees is even available on rocky soils, much broken by ledges and by crumbling fragments of stones. Here, one of the very best trees is what is called the Scotch larch, similar to our hackmatack, an account of the successful planting of which in Scotland, may be found in Emerson's Report, p. 91, which is well worthy of perusal and imitation. I know myself of extensive plantings of it on spots seemingly most unpropitious for any sort of tree. The red cedar too (*Juniperus virginiana*) is admirably fitted for such places, and when these trees spring up spontaneously, they should be encouraged by lopping off the lower branches and inducing them to rise to greater height, for in a few years there will be a fine crop, fitted for making posts and rails for the pains. The red cedar bears this lopping and pruning so well, that it can become used to the shears under hedge culture, and can be cut into any requisite shape. One of the most picturesque little spots I ever saw, was composed of a rocky ledge, out of which and rising above the the wild growth of smaller trees, a sour gum (*Nyssa multiflora*) shot out into the air, equally beautiful and attractive in winter, when its straggling and flattened branches were grotesque and unique, as in summer, when its dark green foliage was lovely, or in autumn, when crimsoned by incipient decay. Some amateur may chance give more money to purchase its surroundings for a dwelling-house, than the entire price of the farm without this pretty knoll would amount to under other circumstances.

The hop hornbeam, called also leverwood and ironwood (*Ostrya virginica*) thrives upon the scanty soil of such spots—a tree a thousand fold better for use than bare rocks and sunburnt ledges.

For quick growing, ornamental and useful trees, the maples stand conspicuous. But the sugar maples, *Acer saccharinum* and *Acer dasycarpum*, the most sweetly and pleasantly useful, require good soils, and such as it is considered are better employed in other ways. And yet it may be a question whether for utility or for ornament, land by the sides of fields bordering on public roads could be better used than in the culture and care of these trees. The Chinese sorghum will never do away with the sugar maples, as a producer of the sweets of life, nor do I believe that, in the long run, that grass will be preferred to the tree, especially while it is problematical whether cane sugar can be produced from it. * * * *

The ash trees, (*Fraxinus acuminata* and *Fraxinus sambucifolia*,) called white and black ash, do very well, even when transplanted in quite ordinary soils; and their cleanly habits and handsome contour and light graceful leaves render them all desirable.

The horse-chestnut tree (*Æsculus hippocastanum*) is most easily raised from the nuts, which should be scarcely covered with earth and leaves immediately on ripening and falling from the trees, and transplanted when of convenient sizes. The tree of Heaven (*Ailanthus glandulosa*) grows very rapidly, and is much sought for to plant in cities, where it thrives exceedingly; but its unpleasant scented flowers and disagreeable smelling leaves often render it an object of aversion, which objections do not lie against its relative, the Kentucky coffee tree, (*Gymnocladus canadensis*,) equally beautiful in appearance and equally hardy.

Some one has made a quaint remark, that among other duties of life, every man should build a house and plant a tree. There is not always the need of the house-building, nor always the means; but means and ability and future need all cry out for the tree-planting; and let every one plant a tree and see that it grows, and future generations will silently

bless the public spirit that dictated such a course. Especially should the farmers look to this, and begin at once on such good deeds of duty and of a true and refined charity, which shall in due time make our State a garden, and render it full of pleasant associations to those whose fortunes or business lead them away from their early homes, to which the heart yearns always to return, to spend declining years and die beneath their old ancestral trees.

HOME ARCHITECTURE.—No. III.

BY WILSON FLAGG.

ORNAMENT.

MR. RUSKIN contends that architecture should be regarded as a fine art, only so far as it relates to ornament, and that the art of construction is simply a department of mechanics. If, under the head of ornament, he means to include those pleasing effects which arise from the style, proportion, disposition and arrangement of parts, his position is a reasonable one; but if by ornament he means those decorative objects only which are added to a building after it is constructed, he would find it difficult to maintain his position. Ornament, in its literal and common acceptation, seems to me but an inferior department of architecture. It must be admitted, however, that there is a science of ornament, or a law for the production of pleasing effects, and that this science embraces the rules by which both the interior and exterior of a building shall be made to affect the human mind most vividly with those feelings which it ought to excite. The more of this pleasing effect the architect can produce, without the aid of literal ornament, the more is he the master of his art: as we should say of two sculptors, that the one who could produce the most vivid impression of beauty simply by the form and features of a bust, is possessed of greater genius or art than one who should be obliged to assist his work by wreaths and other decorations, in order to produce an equal effect.

Every ornament, which is not intended for relief, must be

suggestive or significant of some valuable quality or purpose of the building. Every false ornament is *insignificant*. We commonly apply this term to minute objects, but it should not receive this limitation. If we were to set up little images of the size of children's toys at the angles of the window frames, or in niches made for them, every body would acknowledge their insignificance. Yet they are no more insignificant than full-sized statues, arranged as they often are in front of certain costly houses. How beautiful soever they may be as works of art, unless they are placed before the house of a sculptor or worker in marble, or in front of a building which is a receptacle for statuary, they are insignificant. Before a private house, mansion, or palace, they can serve no purpose at all except that of vanity.

Columns, however massive and imposing, belong to the class of insignificant ornaments, when they either support nothing at all, or when they support an object which is itself superfluous. Witness, for example, the granite columns surrounding the Boston Custom House! Do they serve any needful or rational purpose? A few of them are necessary to support the pediment and roof of the porches. As a whole, they are mere imitations of the style of a Grecian temple, monstrous counterfeits of a monstrosity, of a heathen edifice which was designed only as a bugbear in the eyes of the people, who were to be duped by the priests who held their orgies within its walls; a style of building which is admired only on account of its classic associations, and the magnitude of that despotism which caused the originals to be erected. From these monstrous relics of a barbarous and despotic age are derived our absurd notions of the five orders of architecture, by which I am always reminded of the five opening roots and the five lesser opening roots, the five emollient herbs and the five capillary herbs of the old pharmacopœias.

Columns, however, when they are used to support the roof of a porch, of a corridor, or a gallery, are truly ornamental, because their purpose and their significance are in these cases apparent; and the base and the capital are to be regarded as true and rational ornaments, because they soften the abruptness of the junction of the columns with the contiguous parts

of the building. They would otherwise appear to be driven into the objects which they support. The base and the capital serve likewise a useful end, by giving firmness to the columns, and causing them to yield a better support to the parts that rest upon them. They are carved and bevelled in various ways to afford relief to the eye; but an excess of this kind of work produces the effect of false ornament, like the unnecessary use of columns.

Another important source of ornamental effect is the outside color of a house. The nearer this color approaches to no definable hue, while it is neither too light nor too dark, the more pleasure does it afford the eye in connection with the building. Paint a house with Prussian blue, a deep crimson, or a bright scarlet or yellow, or any other color which is positively beautiful, and it becomes immediately a disagreeable feature in the landscape. Almost all intelligent people are united in preferring homely colors for a dwelling-house. Still if fashion were to introduce any beautiful pigment for the outside of houses, I have no doubt it would be admired for a season, as the public have for several years admired the temple houses and other counterfeits, which, to an unprejudiced and intelligent observer, are disagreeable because they are foolish.

It may seem rather paradoxical to assert that in dwelling-houses, or in buildings of any description, "the beautiful," in the positive sense of the term, is a quality not to be sought, but to be avoided. If this be one of the desirable qualities of a house, why neglect the employment of brilliant and fascinating colors, which would be the most direct and certain means of rendering it beautiful? Every man's common sense teaches him that the use of such colors for the outside of houses would make them ridiculous. Setting aside all considerations of expense, the majority of civilized persons would declare such houses offensive as objects in the landscape. Why would they be thus offensive? *Because nature is not beautiful*, in the sense in which the term is generally used; and beautiful objects, therefore, unless they be very minute, cannot harmonize with the sobriety and homeliness of her dress and general aspect. Nature has wisely provided

that the most brilliant and enchanting colors and forms should be confined to the minute objects of her creation, while those objects which are the most apparent, from their magnitude or the extent of their distribution, are sober in their hues, and rough and rude in their superficial character. All the exceptions to this law of her creation, in regard to objects of any considerable magnitude, apply to such as retain their beauty only for a short time. In the forms and hues of the clouds which are changeable and evanescent; in the frost-work upon the windows; in gems and precious stones, and in all her minuter creations, as in birds, butterflies and other insects, and in leaves and flowers, she has displayed the most beautiful forms, hues and arrangements. But the vast rocks that compose the hills and mountains, the sombre green of the woods, and the dull brown of the landscape, are destitute of beauty, and become attractive only by their influence upon the imagination.

The colors of the landscape, except for a short time in the summer and autumn, are far from beautiful. The same may be said of the forms of trees, compared with the works of art; and though the leaves may be excepted, they are so minute that their beauty is not apparent, except upon close observation. Though we speak of beautiful trees, the epithet in most cases, when applied to them, is used in a relative sense, their beauty being of the same description as that of an old moss-grown wall, merely picturesque or suggestive. It seems to me that few things are more evident, than that nature has distributed beauty very sparingly over the surface of the landscape, lest the susceptibility of her creatures to its effects should be diminished by the stimulating influence of an excess of this quality. In this respect art should, to a certain extent, imitate nature, who avoids everything that will intoxicate the senses, but employs a certain mixture of positive beauty with all her scenes, to wed the mind to the general aspect of her works.

It is very apparent that in regard to what may be called visual beauty, nature will not bear comparison with art; and though we are more charmed with nature, it is only because she exercises a deeper influence upon the imagination. Hence,

to the uncultivated, nature is almost entirely destitute of attractions; they admire only her magnificent spectacles, a vast cataract, a display of brilliant light in the heavens, or some other scene that inspires them with wonder. But nature, I repeat, does not deny beauty to her evanescent forms, however stupendous. Hence the incomparable beauty of the rainbow.

No person would think of drawing any comparison between the pleasurable emotions arising from the beauty of the clouds at sunset, and those excited by entering within a dome of colored glass. The latter produces only the visual sensation of beauty, while the former impresses a delightful influence upon the mind and spirits. In the one case we view the handiwork of man—in the other, that of the Deity. Yet I well remember, while gazing upon a gorgeous and glowing sunset, and yielding my mind to its sublime and exhilarating influences, I stepped into a dome of colored glasses, and remained there three or four minutes with my companions, admiring the visual splendor of the scene. When I came out into the open air, to enjoy the more agreeable scene of nature, the susceptibility of the visual organs was so benumbed by the intense beauty and brilliancy of these artificial hues, that the glories of the heavens seemed dull, faded, and without character. Alas! thought I, how, by the luxuries of art, may we destroy our susceptibility to be moved by those appearances, which are designed by nature to elevate the soul, and to sustain our love for her works!

In the course of my remarks, I do not refrain from applying the epithet beautiful to those homely and artistic buildings which agreeably affect the mind of the spectator. But in these cases I use the word in a *relative* sense, recognizing three kinds of beauty—beauty to the eye, or the visual nerves, beauty to the imagination, and beauty to the intellect. The first is the only positive beauty, and it affects a child, a barbarian, and even certain brute animals as deeply as it affects a man of cultivated mind. The second is that quality in an object which, through the medium of sight, acts agreeably upon the imagination and affections. The third is the beauty of fitness and propriety, and is that which is most requisite

for producing agreeable effects in architecture. As the brightest landscapes are homely, a building, to harmonize with them, must be sober in its aspect and simple in its external design. The beauty of such a house should be the relative beauty of fitness and propriety.

In New England we have been accustomed from our infancy to white houses with green blinds; and custom has not only reconciled us to these colors, but has rendered them absolutely pleasing to the most of our people. But those who admire white houses look upon them without reference to the landscape. They think of the color only as it seems to be indicative of neatness, as a housekeeper regards the whiteness of her linen. To the eye of an intelligent European, white houses are generally disagreeable, because he cannot bear their glitter. The inhabitants of Europe are more inclined to view such objects with a painter's eye, and to perceive that just in proportion as the color of a house is bright or beautiful, it stands out too boldly from other objects in the landscape, and is deficient in repose.

I have endeavored to show that all true ornament is suggestive and significant, and I am far from denying the propriety of using any kind of ornament, which invariably awakens pleasing and healthful emotions in the mind of the spectator. But glittering appendages and bright colors are too stimulating to be healthful, because they deaden one's susceptibility to the sober charms of nature, and they are unavoidably associated with pride and ostentation. But all commendable ornament has so much sobriety about it, that it is commonly overlooked; its pleasing effects are felt, but their cause is not apparent; and hence they are supposed to be attributable to nothing at all—as if something could come out of nothing! Plain houses are often delightful objects in the landscape, when they have a great deal of this suggestive beauty. But this sober ornament is overlooked by the masses, who are more attracted by something that glitters upon the sight and stimulates the visual nerves.

Ask an uneducated clown, who is not only without literary education, but who has not, like many uneducated Europeans, acquired a painter's eye by familiarity with the higher works

of art; ask one of these unlettered American clowns his ideas of architectural ornament, and, while thinking of an answer, his mind would become filled with confused images of green blinds, white paint, rose windows, and colored glass, until he was lost amid cupolas, pinnacles, and a vast wilderness of colonnades. His ideas are like those of a child, who is delighted with painted baubles, except that the grown man's ideas and baubles are somewhat magnified. But the clown is not very far removed from the great body of artists in all parts of the world. His ideas are those of the child magnified. The ideas of the mass of artists are those of the clown reduced to system.

But while conversing with the masses, we should occasionally meet with an individual, who, though perhaps illiterate, is endowed both with feeling and good sense. He has some rude conceptions of the beauty of fitness and propriety, and of moral and picturesque expression; but no taste for the mere vanities of art. Yet he is full of genius and sentiment. While he despises all glittering and unmeaning ornamentation, he appreciates the charm of neatness, and the signs of comfort and thrift. He admires the old trees that stand in artless majesty about his grounds, and would not sell one of his old standard oaks to the *timberer* any sooner than he would take an ignominious bribe. He would never mar the face of nature for the sake of attiring her in an artificial dress. Yet he is foremost in adopting all those improvements that relate to comfort and convenience.

This sensible working-man is like an artist of feeling and genius, who values ornamental art only as it serves to heighten our love of whatever is useful, virtuous and honorable, and as it contributes to fill up our sources of lasting happiness. The great mass of artists delight in art for the display of art; they love glitter like the clowns, and differ from them only in their skill. It is our artists, indeed, who frequently corrupt the taste of the people, by inspiring them with an ambition which they do not know how to direct. The most interesting houses and grounds in this country are those which have not been improved and beautified by a "man of taste" on the one hand, and those which have not been stripped of their wood and shrubbery by a senseless barbarian, on the other.

HISTORY OF FRUIT TREES AND FRUITS.—No. IV.

BY LEANDER WETHERELL.

THE APPLE TREE. SUCCESSFUL PLANTING.

It is proposed, as being immediately connected with the subject presented in the Magazine of April, to give now some remarkably successful results of recent orchard planting.

Mr. N. B. Chamberlain, Philosophical Instrument maker of this city, has a farm at Westborough, where he has, within a few years, set two thousand apple trees, located in three different lots. Two hundred of these were set in the spring of 1858, on the eastern slope of a hill—soil wet, subsoil clay, free from stone. In digging a well thirty-seven feet deep, the depth of the clay was not fathomed. The trees are sheltered from cold westerly winds.

Before setting the trees, the ground, though new, was cultivated and manured well for two years. It was deeply ploughed. The holes for the trees were dug large and deep. They were planted and covered with the mellow tilth of the field. In 1854, a crop of corn was raised among the trees, and a crop of oats the following year, succeeded by clover. The second year the trees were mulched with grass cut green, and kept in large heaps until it heated and settled down. A quantity of this was put around each tree, this having been accidentally neglected the first year.

Great care was taken in selecting the trees, none being accepted but those of the best quality. Every tree grew. They are all of the Baldwin variety, and were set twenty-five feet apart. The trees were of good size, and a dozen of them fruited the first season after setting. A few bore the second and third years. On the fourth, every one of the two hundred trees produced fruit, some of the best having a peck apiece, others less. Every tree proved to be a Baldwin.

This lot of trees, having been properly trained in the nursery, had no more than four, nor less than three branches; none of these nearer the ground than five and a half feet. The trees were straight, and so are the rows, "lengthwise, crosswise and diagonally," adding, as some think, greatly to

the beauty of this fine young orchard. Not a "primary limb" has been cut from one of these trees, clearly illustrating that, if trained well when young, they will not depart from it as they grow older. Another orchard, where the trees were less carefully selected, has cost the proprietor many dollars to remove redundant "primary limbs," causing injury to the trees, all through the neglect of the nurseryman, thus proving, on the same farm, the importance of procuring trees that are right in every particular, for transplanting.

William Buckminster, Senior, Editor of the *Massachusetts Ploughman*, planted an orchard of three hundred trees in the spring of 1852, covering about three acres of land. They were set about twenty-five feet apart, and the ground tilled before and while the trees were growing. They were mulched with straw and hay; this keeps the soil light and moist about the roots, by preventing too rapid evaporation. Unless the mulching was buried on the approach of winter, it was removed to keep away the mice; banking is deemed preferable, as the decomposition of the mulching tends to fertilize and thus promote the growth of the trees. Mr. Buckminster states that a number of his trees fruited the third year after setting. This orchard having been visited several times by the writer, he can bear testimony, from observation, to its elegant and very promising appearance.

The orchard of Moses Stebbins, of South Deerfield, set at intervals since 1845, containing now more than two hundred trees, is one of the finest exhibitions of what may be done in orchard culture in the State. It is located just above the alluvial of the Connecticut River, on the easterly sloping base of Sugar Loaf Mountain. The soil of this old pasture is of the new red sandstone formation. The working of it has turned out an immense quantity of small stones, which have been used for making a wall on the upper side, next to the pasture. The protection from northerly and westerly winds is all that could be desired.

Before setting the trees, Mr. Stebbins cultivated and fertilized the ground well, ploughing very deep, top-dressing liberally with a compost of salt and slacked lime. On two acres he spread on, and ploughed in, six thousand pounds of lime

and sixteen bushels of salt. One hundred and twenty trees were set on these two acres, and the ground has been tilled and cropped annually. In 1855 he raised fifty bushels of corn to the acre, using no other manure than five hundred pounds of guano sown broadcast and ploughed in. The trees receive a top-dressing of compost every spring, and nothing is permitted to grow under them. It is thought by many, and claimed by the proprietor, that the remarkable success attending the planting of this orchard is to be attributed, chiefly, to the liberal use of lime and salt. Having often visited this young orchard with its enterprising owner—who, by the way, is a model farmer, having one of the best and most highly improved farms in Western Massachusetts—and once as Chairman of the Committee on Fruit Trees of the Hampshire Agricultural Society, the writer does not hesitate to say that he considers this experiment as one of the best demonstrations of what may be done in apple culture that can be found in the State. The experiments of Mr. Chamberlain and Mr. Buckminster are very similar in kind. It will furnish any lover of progress and improvement the highest satisfaction to visit any or all of these gentlemen and look at their pet orchards, of which they are justly proud.

But, says an objector, these remarkably successful cases should not be held up for the ordinary encouragement of farmers, for they are all most extraordinary results. Admitted. What really valuable improvement is not? Then the query naturally suggests itself, what farmer or gardener in Massachusetts is willing to say that I cannot do what Mr. Chamberlain, Mr. Buckminster and Mr. Stebbins have so admirably done? Not one who is possessed of a spark of the spirit of improvement. Then why not go about it immediately, and do likewise? The *modus operandi* is before you. It is far easier to imitate a successful experiment than to make one of discovery, and confirm its practicability. There is an immediate and pressing demand for the increased produce of apples. During the past twenty-five years the quality of apples has been greatly improved, though the quantity has apparently greatly diminished, while the demand has gradually and constantly increased, until the price demanded has been so

much enhanced as to place them among luxuries, too costly to be used by families supported by small annual incomes. It is hoped this subject of apple-tree culture will receive more attention from horticulturists and farmers. The old orchards are ceasing to produce,—the ground where they are having long since been exhausted of those qualities essential to the growth and maturity of good fruit.

Farmers and fruit growers should immediately set about the work of locating and suitably tilling and preparing the ground for setting trees. After having chosen a site, then proceed to the work of preparation. Hitherto, little attention has been paid to this subject; too often have trees been planted in ground without the least preparation,—the holes being dug similar to post-holes, as the writer has observed in old pasture or meadow lands, to receive the roots of the young trees, with no other preparation or care, and, ere long, the proprietors wonder why their trees do not grow and produce. The wonder should be, rather, and is, that trees should ever become productive under such treatment.

The first step to be taken in the work of preparation, is, deep and thorough drainage, deep tillage, and liberal and suitable application of fertilizers; and, notwithstanding the apple thrives well in adhesive loam, it is essential that the subsoil should be dry. Hence, in the words of another, “a loam of this character, three feet in depth, on a dry and pervious bed of gravel, would be perfection in itself, as regards the apple.” Such, however, can seldom be obtained.

Deep tillage before the trees are set, or what is better, though more costly, trenching; but after, shallow ploughing, not exceeding three inches, thus avoiding the stirring of surface roots any deeper, limiting to such crops as shade little, such as potatoes, turnips, or onions. Thus, by tillage, will trees do better than if the ground be seeded to grass, at least during their period of growth.

An English writer, in treating of this subject, says, “a sound and somewhat greasy loam is most eligible for the apple. It matters little what the shade or color be; we would, however, prefer it of a bright yellowish brown, or of a hazel color, and, by all means, of a uniform character. It is a well

known fact, according to the Hereford cultivators, that the same sorts, from a lighter soil, produce inferior cider to those on stiff soils. Pears, on the contrary, for perry purposes, do well on the lighter soils, and the perry is found to be of superior quality. Hence the finest cider and the finest perry are seldom found in the same localities"—facts that manufacturers and dealers in these delicious and healthful beverages, as well as the consumers, will do well to remember.

The same writer, speaking of the distances and mode of planting trees, observes, that practices vary very much. We consider thirty-five feet at least near enough, though often planted within sixteen or twenty feet of each other. Thus planted, the branches soon become interwoven, and the fruit produced under such disadvantages will be of inferior quality. In some parts of Herefordshire they are planted sixty feet apart. All who observe the mode of planting here—not excepting the fine young orchards which have been cited—will admit that trees are planted too near each other. This fault should be corrected.

The mode of setting recommended by some is what is termed the quincunx, thus giving the orchard the appearance of a grove or wood, being far preferable to the right angle arrangement commonly practised.

It is also deemed preferable that the holes for receiving the roots of the trees should be opened in the fall, especially where the soil has not been well prepared by tillage, that the soil to be used for covering the roots may be mellowed by the action of the frost, sun and air during the winter. In the spring, when planting such, a little compost should be mixed with the soil, in order to give the trees a good start. It is well to apply a little mulch to protect the roots from drought. If the ground be in good order, fall planting is deemed by many as preferable; but otherwise, spring is thought better. Use no stakes to support trees when planted, neither suffer any animals to feed or be fed in a young orchard.

History, observation and experience confirm the maxim that nothing valuable can be obtained without labor. For the want of it, there is great lack of good apples. Facts prove that well-selected grounds, suitably prepared, fertilized, plant-

ed with good trees, and properly cultivated, will yield an abundance of good fruit. What is needed now is such a multiplication of like facts as shall furnish the market with an ample supply of fruits for edible and cooking purposes, so that the poor as well as the rich can purchase and use them in their families. It is hoped that every possessor of lands, ample and suitable for the purpose, will engage at once in the work of preparation, that soon he may plant an orchard, whose fruit shall regale his taste, and the beverage of the balance thereof shall cheer and make glad the hearts of his household ; for he that soweth shall reap in due time if he fainteth not.

EFFECTS OF FROST ON VEGETATION.

BY H. W. SARGENT, WODENETHE, FISHKILL LANDING, N. Y.

In reply to Mr. Meehan's inquiries respecting the effects of frost on vegetation, and his theory that evergreens stand a much lower temperature in England than in this country, because the air is there saturated with moisture, I am quite satisfied that your idea is the correct one, viz., the absence of the *hot sun*, though I am not sure that I even *entirely* coincide with your theory, that the injury is produced by the rapid thawing out which you think takes place in our climate. On the contrary, I think the damage is done by the cold after the sun, and not, as you suggest, by the sun after the cold. My own idea has always been, that our tender evergreens and half-hardy plants suffer somewhat after the same manner as our pears, apricots and plums; i. e., from a sort of "frozen sap blast"—the sudden freezing of the sap when the vessels have been distended by a warm February or March sun.

A tree, subjected to a temperature of four or five degrees below zero all night, suddenly, by a change of wind, finds itself in a temperature of forty-five or even fifty-five, from noon to four, p. m. This great change probably produces elaboration and activity in the sap, and some swelling of the vessels. After this hour the wind again changes, and the temperature again becomes very low ; the distended vessels are ruptured,

and the circulation of the sap being suddenly arrested becomes vitiated, producing in our fruit trees the disease known as "frozen sap blast," and in our evergreens the wrinkled, enfeebled, withered appearance of those portions generally, before this injury, the most luxuriant and consequently most sensitive to these changes.

I am quite sure the cold is not our greatest enemy. If we could have cloudy weather from the moment the days began to lengthen and the sun's power to increase, we could sustain, or rather our half hardy plants could, a much lower and a continuously lower temperature. Our cold is often most intense about Christmas or New Year, and yet very few plants suffer or show injury until the last of February or March, because the Christmas and New Year's sun is thin and watery in its effects, exciting little or no action on plants, as compared to the powerful rays of February or March.

It seems to me that partial protection—the shadow of the house or of a wood—does for us what the moisture of an English winter does for them, viz., it draws a veil between the plant and the sun, which, by breaking off its rays, prevents this alternate thawing and freezing process, which must be most destructive to all vegetable life exposed to it.

We all know that like the traveller in the Satyr's cave, who blew both hot and cold, we can keep heat or frost in the ground by means of litter or manure, by covering it to keep it out, and by covering it to keep it in. We have only got to raise this covering a little higher, and accomplish about the tree what has been done about the root.

I am not prepared to say but what if we had more moisture in the winter our evergreens might do better. This, however, would be impossible, since, with a winter temperature of fifteen to twenty-five *average*, all moisture would freeze. The next best to this, is to do what moisture partially does, *veil* the sun's rays by a screen of evergreens, or high fence. Mr. Meehan must recollect another thing, that the moisture of England differs from ours in this most important manner,—it comes with them in July and August, which is their usual planting season for evergreens; and the perpetually growing evergreens, like the Deodars, Cryptomerias, and many others,

if inclined to make a summer growth, do so there, and ripen off in their cool, chilly and rainy autumn, so that they go into winter quarters better prepared than the same trees in this country, which, arrested in their work by our intensely dry and hot summers, immediately begin to push in the warm, murky, rainy dog-days of September, and are not found sleeping even early in October. If, therefore, we planted our evergreens in moist places, the autumn growth would be so great that the wood would hardly ever ripen, and the action of the cold and sun upon the immature wood would always be disastrous. My own experience has proved beyond any doubt to me, that the poorer and dryer the soil, the safer the tree, and, with the addition of shade in winter, one can do almost anything. You do not get the superb, luxuriant growth the tree would have if it had fair play, but you get what is next best, you preserve the specimen, which you could not if it did have fair play.

With regard to the two examples Mr. Meehan gives of the maples, I would say briefly, that no period in the year I think could be worse for planting than "a very cold November day," when the roots, being in the most profound repose, were not stimulated to grow or make any action by subsequent mild weather; probably the entire roots went into the ground frozen, and continued in that state, kept so by the superincumbent earth thrown upon them in planting to help keep them in their place, and in this adverse condition were not able to start in the spring, as they would have done, had the day "not been very cold," or had they been planted very early in the autumn, and the frost kept *out* by mulching, and not put in and kept in by being packed in frozen soil, as they probably were.

The second maples were planted the last of February, when the interval between action in the roots and spring was short. These roots were kept moist by rainy sleet, and from the frost by the succeeding snow, and finally planted in a thaw and set and washed in by rain. The near approach of spring soon induced a movement in the roots, presuming there remained vitality enough to second the efforts of nature, and the results followed which Mr. Meehan gives us. This conclusion I come

to from the bare facts, as stated in your last number. If I knew all the facts I might find my theory quite upset.

We are gratified at the able manner in which Mr. Sargent has answered Mr. Meehan's queries in regard to the action of frost upon vegetation, and are also pleased to find that we are sustained by such good evidence in our views already expressed. Mr. Sargent does indeed say that he thinks "it is the cold after the sun that does the injury, and not the sun after the cold, as we suggest." Still we believe we do not materially differ. As we said in our note to Mr. Meehan's last article, (p. 240), "a plant may just as well be frozen one year or one hundred years without additional injury." One freezing certainly, we do not think Mr. Sargent will contend, will hurt a Deodar cedar—but it is the *thawing out* and *freezing again*. Now it may be difficult to say which has the injurious effect, the thawing or the freezing,—but we still are of the opinion, and if we understand Mr. Sargent he is also, that if we have continuous cold weather, such as he says we have in December, no harm is done—all the damage occurs after the hotter sun of February and March. It is the "thawing and freezing process which must be most destructive to all vegetable life exposed to it." It is enough, however, to know that no damage ensues from cold; the danger is from the sun alone. The effort of all cultivators, therefore, who would possess the less hardy Conifers, is to *shade* and keep them cool. Mr. Sargent's article throughout deserves the careful attention of every lover of beautiful trees, and we trust it is not the last time we shall hear from him on this important subject.

POMOLOGICAL GOSSIP.

CURIOUS OPINIONS OF VARIOUS GRAPES.—Mr. Samuel Miller of Calmdale, Pa., a very successful cultivator of the grape, and a good judge of their quality, suggests that "the only way to reconcile conflicting opinions regarding the Concord

grape is to suppose that there are two kinds called by that name." The Journal which gives this information, inquires, "Is it possible!" and remarks, "that those having any information on the subject will do a public favor by communicating the same!" The public may truly say, "the smallest favors gratefully received."

Dr. Grant states "that the Rebecca is not inferior to the Chasselas, in any respect, and the Delaware would equal the Frontignan in all respects except size." We should say the Rebecca quite equals the Frontignan, and the Delaware a perfect counterpart of the Red or White Chasselas, as it has not the least flavor, while the Rebecca has an aroma peculiarly its own—a combination of the musk and strawberry—not excelled by any grape.

Mr. Chorlton calls the Rebecca and Diana "greenish amber" colored grapes, and the Delaware chocolate colored. Is this so? Our Dianas are *reddish* or *rose* colored, only a shade or so lighter than the Delaware, which is far from being a chocolate colored grape, which we think a dingy tint, detracting much from the value of a variety. The beautiful pinkish red of the Delaware is one of its many excellent qualities.

HARDINESS OF THE REBECCA GRAPE.—Some journal states that in Philadelphia "the Rebeccas were utterly destroyed, root and branch, the past winter." With us it has proved hardier than the Delaware. Both are undoubtedly hardy grapes, and when they acquire strength will stand the winters unhurt. Nobody expects a little weak shoot, from a year old vine, will stand through even our mildest winters, unhurt. Seedlings of our hardiest trees are often killed to the ground while only a year or two old. If many of the Rebeccas that have been planted this year do not get killed by the next winter, outright, it will be a much hardier grape than we have supposed. If little green plants, not larger than a knitting needle, forced into growth from a green cutting, in two or three months, and then turned out into the garden, are expected to make roots and top enough to stand a good *white frost*, it will certainly be more than we or any sensible man can expect. The hardiness of the Rebecca is not to be judged

from such vines as these, but from vigorous healthy plants, with well ripened wood.

NEW PEARS.—From the crowded state of our pages we have not been able to find room to notice all the new fruits of recent introduction, among which are some new pears: we briefly describe them:—

HUYSHE'S BERGAMOT PEAR.—A new English variety, produced by the Rev. John Huyshe, a clergyman residing at Clysthydon Rectory, near Collington, about twenty-five years ago. Mr. Huyshe raised three plants of pears, from pips of the Marie Louise, hybridized with Gansel's Bergamot. Of these three plants one produced fruit four or five years ago, which he named the Victoria pear, sending to London, at the time, specimens of the fruit, and also some grafts, at the request of Dr. Lindley, for the London Horticultural Society's garden. It was then regarded as a first-rate fruit, and it has since been extensively cultivated in Devonshire and elsewhere. Last year another of these three pear trees produced two fruits, and this year a larger supply, which has enabled Mr. Huyshe to supply specimens to Dr. Lindley for examination.

The seedling is worthy of its parents, which is saying all that can be said, and we are glad to find that the name of the skilful horticulturist to whom we owe the delicacy is to be associated with it. The size of Huyshe's Bergamot is large, and the form obovate, tapering suddenly to the stem. It is a very handsome, solid fruit, with a clear cinnamon-brown skin, rather darker on one side than the other. Its flesh is like that of the Brown Beurré, when in perfection, or Gansel's Bergamot, as rich and melting as in either of these famous varieties. It ripens in November. In ordinary years it may be expected to keep till Christmas.

VICTORIA PEAR.—Though very good it is inferior to the Huyshe's Bergamot. It is smaller, but of similar form, though not so blunt at the stem. It has the same rich cinnamon skin, but not so dark, and here and there a light green peeps through the russet. Its flesh is perfectly melting to the core. It is a most abundant bearer, it having been found necessary to prop up the original tree in order to pre-

vent the branches breaking under the weight of the crop. Its habit is thriving and robust. Ripe from December to February.

THE TRENTHAM BLACK GRAPE.—A new variety, cultivated by Mr. Fleming at Trentham. Where it originated is not stated. It is a black grape, of most excellent quality, thin skinned, not a Muscat, earlier than the Black Hamburg, and has the valuable property of hanging late without shrivelling. In appearance it somewhat resembles the Black Prince, but its flavor is much more delicate, and the berries are larger. The British Pomological Society, at its meeting in September last, awarded it a premium of two guineas, as the best grape, not a seedling, raised in England, and not in general commerce. The meeting decided that the Trentham Black was a grape of first-rate excellence. As a pot vine the Trentham cannot be excelled. Plants, in 12-inch pots, last year, produced 12 or 13 bunches, while others, in 8-inch pots, bore from 6 to 8 bunches, each. The latter ripened their wood out of doors, having been put out in the previous June. Good plants will be offered for sale the coming autumn.

NEW MUSCAT HAMBURGH GRAPE.—This is another new variety, to be offered for sale next autumn. It is stated to be a very superior variety :—

The following account of it we copy from Turner's *Florist*:—This fine grape is a seedling, raised at Westpark, Bedfordshire, by Mr. Seward Snow, whose great experience and skill in the cultivation of fruits are well known to our readers. Mr. Snow informs us that this grape originated by fertilizing flowers of the Black Hamburg with those of the Muscat of Alexandria. It was named the Muscat Hamburg by the British Pomological Society, which name very correctly describes its character, for it will at once be obvious that there is a great resemblance to the Hamburg in form of bunch and berry, as we understand there is also in its habit, of growth and earliness, and that its other parent (the Muscat) has imparted that peculiar musky aroma, found only in that variety, and which hitherto has been confined to the white grape alone. We can justly congratulate Mr. Snow in having been so fortunate as to originate so noble a grape, and

one likely to prove so valuable. Messrs. Henderson & Co., who have the stock for sale, thus describe it:—

It has the hardiness of its parent, the Black Hamburg, with the flavor of the Muscat. It ripens, and that to the highest perfection, in an ordinary peach house; it is very short jointed, and a most abundant bearer. The bunches are large and handsome, with fine shoulders; the shape of the berry varies even in the same bunch, sometimes round and sometimes oval. The flesh is melting and remarkably rich in flavor, fully charged with the aroma of the Muscat, and with an unusually high perfume.

DESCRIPTIONS OF SELECT VARIETIES OF PEARS.

BY THE EDITOR.

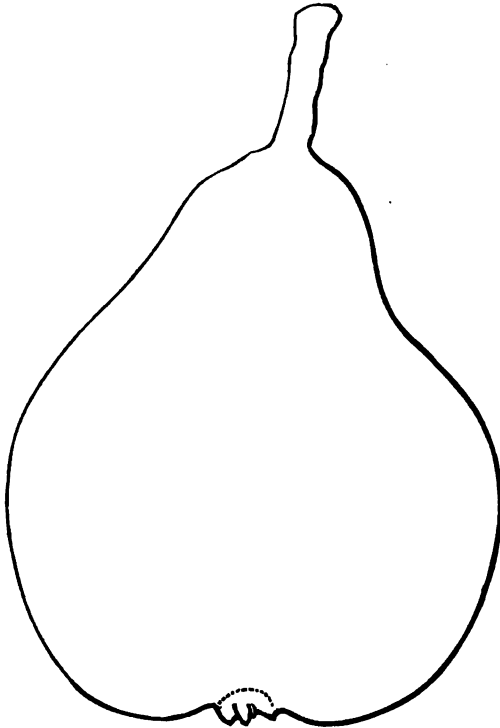
WE continue our descriptions of select varieties of pears; some of them we have fruited for several years, and have been doubtful in regard to their introduction into our list; but additional experience has confirmed their many good qualities, while some of our pomologists pronounce others valuable additions to our collections.

The disastrous winter of 1856 and 1857 has been followed by one of more than usual mildness, and trees of all kinds present a vigorous and healthy appearance, and are loaded with flowers. If not checked by late frosts, the pear crop will be larger than usual, and an opportunity afforded us to test many of the newer and superior varieties. We shall look with interest to the ripening of the present year's crop.

203. DR. TROSSEAU. *Album de Pomologie*, Vol. III.

The Dr. Trosseau (FIG. 11) is one of Bivort's seedlings, which first fruited in 1848, and is well described by him in his *Album*. The tree, he remarks, "has a majestic appearance, everything denoting vigor. The amplitude and thickness of its sombre green foliage gives the tree a severe aspect." It is in fact a very ornamental tree, of the same character as the Beurré Diel, but even more conspicuous from the contrast between the foliage and its very dark colored shoots.

Our trees have as yet borne but a few specimens, but these were large and handsome, and of excellent quality, belonging to the subacid pears, but with a melting flesh, and a brisk and refreshing juice. It appears to bear rather young, and, though time enough has not elapsed to judge of its productive-



11. THE DR. TROSSEAU PEAR.

ness with any certainty, it promises well. The wood is upright and erect, stout, and dark colored, with large, thick, somewhat pendent, dark green foliage.

Size, large, about three inches in diameter, and three and a half long: *Form*, obtuse pyramidal, large around the crown, contracted near the stem: *Skin*, slightly rough, green, becoming dull yellow when mature, partially covered with dark russet, brownish red on the sunny side, and thickly dotted with russet specks: *Stem*, medium length, about three quarters of an inch long, rather stout, and attached by a slightly

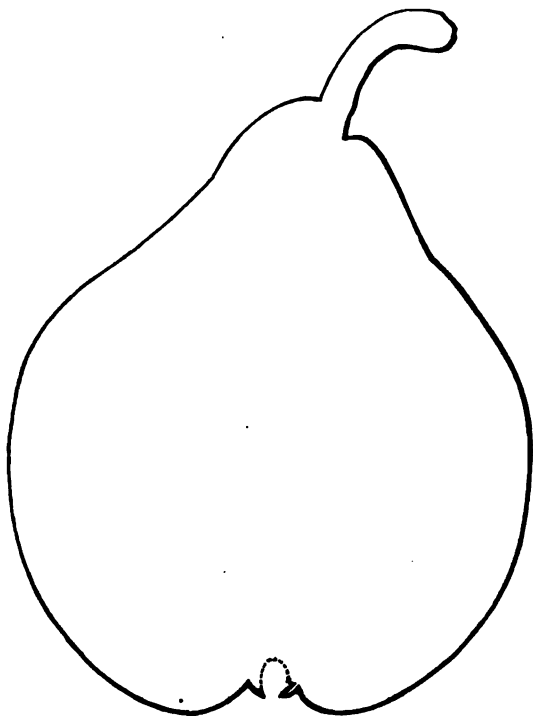
fleshy base: *Eye*, medium size, open, and scarcely depressed in a broad, very shallow basin; segments of the calyx contracted, stout: *Flesh*, white, fine, buttery and melting: *Flavor*, rich, vinous, saccharine, and perfumed: *Core*, medium size: *Seeds* — ? Ripe in November and December.

204. MARECHAL DE COUR. *Album de Pomologie*, Vol. IV.

Conseiller de la Cour.

Duchesse Helene d'Orleans.

Among a lot of scions of seedling pears, sent by Van Mons to his friend Bivort in 1842, was the variety to which was



12. THE MARECHAL DE COUR PEAR.

attached a label as follows: "Marechal de Cour gain de 1841, La meilleur existante," (the best in existence.) Bivort, who describes it in his *Album*, states that it is not certainly the best pear which exists, though excellent, and meriting a distinguished place among our best fruits.

The Marechal de Cour (FIG. 12) was undoubtedly considered by Van Mons one of his best pears, for he gave away scions under two or three different names, and Bivort even describes and figures it as the Duchesse Helens d'Orleans. Many similar errors have been made by both of these pomologists, unintentionally no doubt, but still errors which have led to much confusion in the introduction of new pears. The Marechal de Cour is a rather vigorous growing tree, with grayish bark, and forms a handsome pyramid. We have not had an opportunity to try it upon the quince.

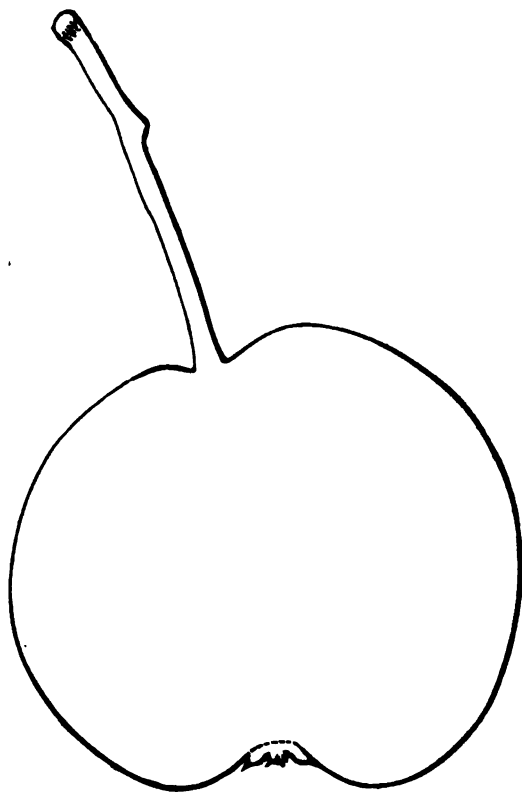
Size, large, about three inches in diameter, and four inches in length: *Form*, pyramidal, large towards the crown, suddenly contracted near the skin: *Skin*, fair, dull green, becoming yellowish when mature, thickly traced and conspicuously dotted with pale russet, having a brownish tinge on the sunny side: *Stem*, rather short, about half an inch long, not very stout, curved, and obliquely inserted in a very small contracted cavity, surrounded with uneven projections: *Eye*, small, open, and deeply sunk in a small, round, smooth basin; segments of the calyx very short: *Flesh*, little coarse, melting and buttery: *Flavor*, vinous, sugary, perfumed and excellent, resembling a Brown Beurré: *Core*, medium size: *Seeds*, medium size, long and sharply pointed. Ripe in October and November.

205. BROOM PARK. *Catalogue* of London Hort. Soc.

The Broom Park (FIG. 13) we have fruited for several years, and have thought it one of Mr. Knight's best pears, better than we have ever found the Monarch, which Mr. Thompson and Mr. Rivers still recommend as one of the very best pears in cultivation; and the high character given it by Mr. Earle, in his late excellent article on pears, accords so well with our own estimation of the variety that we give a description and figure, that it may become, as it deserves, better known. The tree is slow in coming into bearing, but it is very hardy, bears well, and the fruit keeps nearly or quite as well as the Winter Nelis. Its fine musky aroma will make it a favorite with all who love that peculiar flavor in pears. Mr. Knight describes it as having the flavor of the pine apple

and melon combined ; certainly a very good idea of its excellence. It has not the showy appearance of some pears, neither is it only of medium size, but those who prize quality more than those characteristics will find it a desirable addition to any collection.

Size, medium, about two and three quarter inches in diameter and two and a half inches deep: *Form*, roundish, slightly irregular, with a somewhat ribbed surface, much swollen on one side, and little flattened at the base: *Skin*, fair, greenish



13. THE BROOM PARK PEAR.

yellow, considerably shaded with dull red on the sunny side, and very thickly overspread with russet, and dotted with green and russet specks: *Stem*, long, about one and a half inches in length, moderately stout, straight, and inserted in

a small, contracted, somewhat ribbed cavity: *Eye*, large, open, and moderately depressed in a round, open basin; segments of the calyx thick, stout, diverging, entire: *Flesh*, coarse, yellowish, half melting and very juicy: *Flavor*, sweet, with a melon-like flavor, and excellent: *Core*, large: *Seeds*, medium size, broad, flattened, brown. Ripe in January and February.

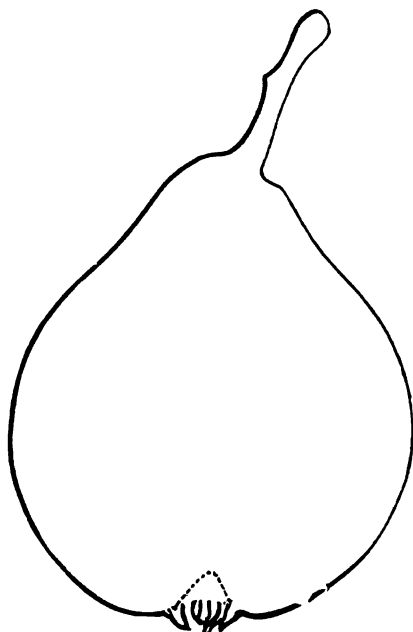
206. SUMMER ST. GERMAIN. *Cat. London Hort. Soc.*

Short's St. Germain, }
 St. Germain de Martin, } acc. to Cat. Lon. Hort. Soc.
 St. Germain d'Ete. *N. Duh.*

For several years we fruited a very excellent pear, without knowing its name. It was among a number of trees which we purchased when in London, in the autumn of 1844. Its handsome appearance, uniform size, and its productiveness, as well as the very remarkable juiciness of the fruit, and its freedom from worms, induced us to extend its cultivation, and discover, if possible, its name. After a careful perusal of all the pomological works we could procure, and a comparison of the specimens with the descriptions, we came to the conclusion it was the Summer St. Germain, and so named it. We had in our collection this variety received from Mr. Rivers of Sawbridgeworth, but, as it had not borne, we knew nothing of the fruit; the wood and leaves appeared similar. Two years ago the latter came into bearing, and proved to be the same pear.

Compared with the Boston, Tyson, and Rostiezer, it falls short of the requirements of a superior pear; but, judged by the popular standard of a market pear, as we judge the Bartlett and some others, it is a valuable variety. It has much of the appearance of the Summer Franc Real, but it is rather larger and handsomer, and does not rot at the core. It is a prodigious bearer, and ripening, as it does, two weeks before the Bartlett, comes in at a season when there is a great need of more pears. We have gathered it in large quantities from several fine trees, and have scarcely found one poor specimen in a hundred. It is a very profitable market pear. The tree makes very stout wood, and forms an open head.

Size, medium, about two and a half inches long, and two in diameter: *Form*, obovate, rounded off at the crown, contracted and obtuse at the stem: *Skin*, fair, smooth, light yellowish green, very slightly tinged with blush on the sunny side, and regularly dotted with dark green specks: *Stem*, medium length, about one inch long, moderately stout, knobby, and somewhat swollen at the base, curved, and obliquely inserted without any cavity, surrounded with uneven projections: *Eye*, medium size, open, and but slightly depressed in a much ribbed and small basin; segments of the



14. THE SUMMER ST. GERMAIN PEAR.

calyx stiff, projecting: *Flesh*, yellowish white, coarse, half melting and very juicy: *Flavor*, vinous, sprightly, little perfumed and excellent: *Core*, large, slightly gritty: *Seeds*, large, long and pointed, very dark. Ripe the middle of August.

REVIEWS.

HEDGES AND EVERGREENS. A Complete Manual for the Pruning and Management of all Plants suitable for American Hedging; especially the Maclura or Osage Orange, &c. To which is added a Treatise on Evergreens, &c. By JOHN A. WARDER, M. D. pp. 291. New York. 1858.

WE had just finished our article on "Hedges and Hedge Plants," in our April number, when Dr. Warder's book came to hand; otherwise we should have endeavored to make room for a notice of it before.

To say that it is a most excellent work would be no more than should have been expected from so able a writer and experienced cultivator as Dr. Warder is known to be: it is more than this. It covers, in the most thorough manner, the whole subject of hedging,—only partially treated upon in other gardening works,—but one of great importance to the agricultural interest, and of particular consideration to amateur and suburban cultivators, who wish to introduce ornamental divisions into their grounds, in the place of the unsightly wooden paling.

"Fences," says Dr. Warder in the Preface, "of some kind being one of the recognized institutions of our country, and the majority of our best farms being destitute of rock for walls, and being rapidly divested of timber for wooden fences, foreign materials, whether of boards or iron, present themselves as candidates for public favor,—and I here beg to offer that agreeable alternative,—the useful, the economical, the practical, and, at the same time, the ornamental Live fence or Hedge."

Now the only fault we have to find with the Doctor's book, is the unqualified recommendation of the Osage Orange as a hedge plant. We have already given our objections to it, and much recent discussion in the Western papers shows that it is not fitted for a hedge in northern Illinois and Northward, or in Pennsylvania and Eastward. South of Washington it will do. The occasional hard winters kill out the plants. A wri-

ter in a Western paper says, that of the millions of Osage Orange planted the last few years, "it is doubtful whether there is in any one State in the Union, five hundred miles, of hedge deserving the name."

However, there is enough on the planting, pruning, and management of hedges, which apply to all plants, to render the treatise instructive to every planter, and we commend it to especial notice.

The part devoted to evergreens is timely and valuable, and we trust will aid in making these too much neglected, but highly ornamental trees, so popular, that no grounds, however small, can be considered complete without them. Some very pretty illustrations of the more rare Coniferæ embellish the volume.

HOW PLANTS GROW; a Simple Introduction to Structural Botany, with a Popular Flora, and illustrated by 500 Engravings. By ASA GRAY, M. D. pp. 230. New York. 1858.

DR. GRAY is doing invaluable service in the cause of botanical science by popularizing a study so long thought beyond the reach of only the scientific inquirer. This is a book intended to teach young people how to begin to read with pleasure and advantage "one large and easy chapter in the open Book of Nature." It is emphatically, as the author calls it, "Botany for Young People."

The first part of the work is systematically arranged in a progressive manner, as follows:—

First. How plants grow, and what their parts or organs are.

Second. How plants are propagated or multiplied.

Third. Why plants grow. What they are made for; and

Fourth. How plants are classified, named and studied.

The second part consists of a popular Flora, for beginners only, a classification and description (according to the natural system) of the common plants of the country, both wild and cultivated.

It is needless to say that these arrangements are treated in

a plain and familiar manner, so simple that the young child may understand. Numerous well executed wood-cuts illustrate the text, and explain what is often not understood by technical descriptions. Its introduction into our high schools would soon create among the young such an interest in all the most common plants, that every way-side walk, every stroll through field and forest, or even upon the sea-shore, would open new pleasures and invest every scene with new delight, by making what now appear mere weeds and bushes familiar objects, each with its distinctive name—like so many companions, accompanying them at all times and wherever they may go.

A copious glossary of botanical terms and full index accompany the volume. We most heartily commend it to the attention of "children of a larger growth," as well as the young.

THE FARMER'S AND MERCHANT'S PRACTICAL ARCHITECT, and Guide in Rural Economy. By J. H. HAMMOND, Architect. pp. 224. Boston. 1858.

WE already have a dozen treatises on architecture of the higher class, suburban villas and cottages for gentlemen of wealth, or of moderate means. Another work of this kind would be quite superfluous. But of the more humble class of houses—houses for the plain farmer—houses free from the "drapery" of shingle architecture, there is still a want. This want it is the object of Mr. Hammond's book to supply. It contains twenty-four designs for houses of various cost, all in a simple, plain, and neat style, adapted to the condition of a large class of our population, among whom one of the "picture" houses some books represent, would be as much out of place as a rustic cottage in State Street.

Twenty-two essays accompany the designs, mostly by our correspondent, Mr. Flagg, which give additional value to the work. We trust it will be the means of introducing a better style of building among our farmers and town residents.

General Notices.

PUTTING OUT BEDDING PLANTS.—Commence with the hardiest and strongest plants, and let the work be done, if possible, in still weather. The varieties of flowers which are to occupy the various beds, and the admixtures of foliage and of colors, are matters which ought to be decided upon beforehand, and if a plan of the resolutions adopted is marked down on paper it will save much trouble and some disappointments. The harmony of colors, the relative growth of the plants, and many other things on which good grouping depends, cannot be settled with the pot and trowel in hand, and the want of forethought in this department will entail more or less of failure and vexation. A map, constructed with regard to taste and general effect, will therefore much help the gardener.

Turn out the plants with as little disturbance of the roots as possible. Sometimes, however, older kinds will be found root-bound, and in that case the compact mass should be broken a little so as to disengage the entangled roots and give them a new direction. The neglect of this simple rule often prevents a plant flourishing, for the close and matted ball of roots will throw off any wet which comes upon it, and the consequence will be that the plant will not grow. Press each plant firmly into the soil and give it a good watering. This leads us to observe that both the beds and the pots should be in a rather dry state when this work is attended to, as nothing is worse than working in mud, or clay, or anything approaching to them. When the soil is a little moist without sticking to the fingers, it is in a state fit for any gardening operations. Water applied then will run through, and benefit the roots of the plants without saturating the material in which they grow. Watering afterward must be performed with discretion. Inexperienced gardeners almost always err in watering to excess; but unless the plants flag it is best to let them alone. The roots will extend themselves far more rapidly in a dryish warm substance than in one made crude and cold by over watering. A good rain will be of great benefit, and so long as the plants do not suffer from drought it will be best to wait for the friendly irrigation of the clouds.

Training must be kept in mind as the work of bedding-out proceeds. For instance, Verbenas should be pegged down at once, so that they may receive the desired direction from earliest infancy, so to speak, since with plants as with things possessed of a higher life, education should begin young. The last operation of stopping the shoots may also now be attended to, and no desire to save a flower at the present moment should interfere with the future great advantages of a robust and compact growth. Pinch out, therefore, the heart of any leading shoot which seems to be going too much ahead of the rest, and the result will be the formation of more side branches. Scarlet Geraniums, Verbenas, Calceolarias, and indeed most things, are the better for this process.

Where bulbs are much cultivated they will now be somewhat in the way of the plants which are to take their places. Unless the foliage is nearly withered it will injure the bulbs to cut it off, and therefore if they must

remain where they are the bedding plants can be inserted among the leaves of the Crocuses Hyacinths, and Tulips. A little patience must be exercised with the untidy appearance this will give to the beds, and the contrast will be most pleasing when some week in June all this redundant matter can be cleared away, and the new plants allowed full and sole occupation. But our plan is generally to devote a bed in some cool situation for transplanting the bulbs which we find to be thus in our way. We take them up with balls of earth and put them in trenches in the new place prepared for them, where they gradually perfect themselves, and are then taken up and put away in a dry shed.

We cannot but sympathise with our numerous readers, who, after months of care and watchfulness, are about to consign their plants to the open beds and borders. We hope the season will be propitious for the beauty of the summer and autumn garden, and that nothing untoward or unforeseen will tend to mar the innocent pleasures which may reasonably be expected.—(*Gard. Chron.*, 1858, p. 381.)

CULTURE OF THE CHRYSANTHEMUM.—The successful treatment of the Chrysanthemum after the cuttings are rooted depends on a proper supply of nutrient and moisture, and the regulation of the stems which are to produce the flowers. In order to give the plants every advantage, they must never be either root-bound or allowed to flag from drought, and these evils are to be averted by frequent repottings and constant attention to watering. The blooming pots should generally be 10 inches deep and 8 in diameter at the top, and between the thumb pots and these final ones at least three shifts should take place, the plants thus occupying five different pots in the course of their history. The shiftings should be made before the roots get bound together, or when they pretty well cover the inner surface of the pots. Fresh rich soil should be carefully made to fill up the spaces formed by the new home. The pot changes we have mentioned are the fewest that can be given in order to secure good flowers and a healthy state of the foliage; and they will be found sufficient for most gardens. But when horticultural skill is to be exhibited, and the full powers of the plants tested, much larger pots may be given at the final shift.

Plenty of fresh air and sunlight must be afforded all through the growth of the Chrysanthemum, and as it is very bulbous it requires some art to prevent the leaves flagging. In hot summer weather, with the sun shining full on the pots, half a dozen waterings in a day would scarcely accomplish this, and prevention must be studied by burying the pots up to the rim in the soil of the garden. In this case, one or at the most two, good waterings a day will be sufficient. Care must then be taken that worms do not get into the pots, by placing them on bricks, slates, or coal-ashes. To prevent the roots striking into the material below the pots, they should be turned round twice a week. Liquid manure may be supplied rather plentifully as the flower-buds begin to expand, for it is found that a finer growth and a deeper color are imparted by its judicious application.

Now for the treatment of the stems. The Chrysanthemum, like other plants producing terminal flowers, has a tendency to send up one leading

stem, which, if not interfered with, would produce a bunch of flowers at the top, so that a long lanky appearance would be the result. This tendency is counteracted by stopping the shoots—a process which produces a compact, shrubby growth and a great many more flowers. How often this process should take place is not a settled point with florists, and the practice must vary with many circumstances, such as the early or late character of the sorts grown, the time of striking, &c. But as a rule we may perhaps say that, for the large flowering kinds, stopping should cease in July, while with Pompones it may extend into August. We must remember that the general law is, that letting the plants run up is favorable to fine flowers, and stopping to a more plentiful supply of them. As the stems advance in height, they must be trained to stakes, and on the early and constant attention to this much of the beauty of the plants will be found to depend. To let the stems get straggling, and then all on a sudden to tie them up like a bundle of asparagus, is as fatal to the beauty as to the healthy growth of the plant.—(*Gard. Chron.*, 1858, p. 359.)

Gossip of the Month.

PEAR CULTURE.—WILL CARELESS CULTIVATION PAY?—One would suppose, if not better informed on the subject, that the question of the profits of pear culture had been left, by mutual consent, to the decision of the great Black Rock farmer and stock raiser. We have for eight years been reading the egotistical critiques of a certain writer who delights in the poisonous name of “Jeffreys,” whose identity, it would appear, has never been fully established. In the respected Downing’s time he made more enemies to that writer’s journal than the kind and affable manner of that lamented author could conciliate during his too brief life. Since the same journal has passed into other hands the same writer has frequently done its interests serious injury by his “peculiarly forcible style of writing.” We used to imagine that the whereabouts of the said critic was either in the vicinity of Detroit, or on an island in the Niagara River, where there is a large orchard and stock farm. And latterly, from a comparison of the reports of the failure of that pear orchard with those articles we feel confirmed in our surmise. Like his great critical prototype “Jeffreys” sinks his pen so deep into the ink as to stir up the dregs and gall. Nurserymen are his especial favorites, the *Orange* pear his peculiar pet. We once recollect the following announcement, published with a flourish, in an *Agricultural Journal* of New York city:—

“Can anybody point us to an orchard of a hundred pear trees worked on the quince stock, and planted within the past ten years, which has been satisfactorily successful in growth and bearing?”

The echo has been twice heard, and now the third resonance has just reached our impatient ears; it was reflected from Philadelphia, all the way, and has been caught up at several points. The great pear orchard of one thousand acres, on Grand Island, has been destroyed, annihilated.

When Burns, the Scottish poet, sang the sorrows and disappointment of a mouse, and in soothing terms designated it as a "*Wee sleeket, cowrin, tim'rous beastie*," he had no knowledge of the perseverance which is displayed by our American *Mus*. It has ruined thousands of trees, and wasted thousands of dollars, in addition to the great discouragement and sore affliction it has brought to our friend "Jeffreys." Yet pears will grow on proper and suitable soils, with careful culture and manipulation, not by being planted and left at haphazard, though the best-laid schemes of mice and men "gang aft agley." If other farmers have had a large pear orchard destroyed, totally annihilated, we should like to hear from them or it. S.

Massachusetts Horticultural Society.

Saturday, January 16, 1858.—Exhibited. FLOWERS: From Thos. G. Whytal, azaleas and other flowers, in variety. From J. Murray, *Impatiens Hookeri*, fine. From M. Trautman, plants in variety.

GRATUITIES AWARDED.

To T. G. Whytal, for display of plants, \$1.

To J. Murray, for *Impatiens Hookeri*, \$1.

To M. Trautman, for *Camellias*, \$2.

February 20.—Exhibited. FLOWERS: From Jona. French, *Azaleas decora*, *exquisita*, *Gleditsianæ*, *optima*, *præstantissima* and *variegata*, very fine specimens, well grown, and covered with flowers. They carried off the premium; also, 3 var. of *Epacris*. From Hovey & Co., flowers of their new various colored seedling *Camellia*, showing the different colored flowers. Fine *Azaleas* were exhibited, from W. Wales, W. C. Strong, M. Trautman, and J. Murray. Fine *Ericas* from W. Wales and J. Nugent.

PREMIUMS AND GRATUITIES AWARDED.

AZALEAS.—For the best six plants, to Jona. French, \$10.

GRATUITIES.—To Wm. Wales, for fine *Heaths*, \$10.

To J. Nugent, for *Heaths*, \$8.

To Jona. French, for several *Epacris*, \$5.

To M. Trautman, for *Epacris*, \$3.

To M. Trautman, for plants, \$3.

To J. Murray and W. C. Strong, for *Azaleas*, \$2 each.

To T. G. Whytal and G. Evers, for cut flowers, \$1 each.

March 20.—Exhibited. FLOWERS: From Wm. Wales, *Azaleas Exquisita formosa*, *ardens*, &c., also, fine roses. From E. S. Rand, Jr., *Erica depressa* and *Cavendishii*, and *Cinerarias*. Plants and flowers, from Barnes & Washburn, T. Page, Jona. French, A. Bowditch, & Son, J. Nugent, C. F. Jones, M. Trautman, and others.

GRATUITIES AWARDED.

To Wm. Wales, for displays, \$7.

To M. Trautman, for the same, \$3.

To Galvin & Hogan, J. Nugent, and J. French, for displays, \$2 each.

To G. G. Hubbard, for the same, \$1.

April 17.—Exhibited. FLOWERS: From Wm. Wales, Dorchester, *Azalea decora*. From E. S. Rand, Jr., Seedling *Calceolaria* Little Ellis, raised by Jas. McTear. From Thos. G. Whytal, Seedling *Verbena*, called Spark, very good. Cut flowers, from G. G. Hubbard, A. Bowditch, and others.

GRATUITIES AWARDED.

To Wm. Wales, for Azaleas, \$3.

To G. G. Hubbard, for cut flowers, \$2.

To A. Bowditch, Barnes & Washburn, and T. G. Whytal, for cut flowers, \$1 each.

May 8.—Exhibited. FLOWERS: From J. A. Kenrick, cut flowers of *Magnolia conspicua*, and *Soulangeana*. From Barnes & Washburn, Celestial, Evening Star, Charles Dickens, Rosy Gem, Giant de Betailles, and Prince of Wales Verbenas, all very good new kinds. Flowers were also sent by E. S. Rand, Jr., W. H. Sumner, W. C. Strong, Mrs. Richardson, T. G. Whytal, and others.

GRATUITY AWARDED.

To J. A. Kenrick, for Magnolias, \$2.

OPENING OF THE HALL, SATURDAY, MAY 15.—The First Exhibition in the Society's Hall took place on the 15th. Quite unexpectedly the show was very fine, certainly the best ever made, except at the Annual Exhibitions. The specimen plants were numerous, many of them were finely grown, and they were brought in without much damage to the blossoms. It was, in fact, a very creditable exhibition, and plainly shows that if due encouragement was given by the award of judicious and liberal prizes, as fine specimens would be produced as command such attention at the London or Continental shows.

We have not space to particularize all the fine things; but conspicuous above all others were the Azaleas of Mr. Wales, which were not only beautifully grown, but in very full flower, and deservedly attracted unusual admiration. The plants were stocky dwarf, and literally one mass of bloom. Mr. Harris's Fuchsias were also finely done—large, branched from the pot up—and, though not in full bloom,—requiring two or three weeks of good weather,—they showed what a little time would have made them. Mr. Wale's Fuchsias were also excellent. Messrs. Hovey & Co. again exhibited a plant of their seedling *Camellia*, with four different colored flowers, expanded in beautiful perfection, well showing the remarkable quality of this most remarkable seedling. Some of the flowers were nearly white, others clear carmine, one half white and half carmine, and another deep blush, striped with rosy carmine. They also had a group of plants, including *Azalea Madame Mieliez*, *Petunia Inimitable*, Rand's Annie *verbena*, some fancy *Pelargoniums*, *Thujopsis borealis*, &c., not for competition. T. G. Whytal had a large and exceedingly well-grown *Venus de Medici* Fuchsia; Wm. C. Strong some fine Azaleas, &c., and M. P. Wilder, a large *Azalea decora* and *variegata*. The *Cissis discolor*, from H. H. Hunnewell, attracted great attention; it was a large specimen, well grown, with very heavy foliage, of a rich tint, and altogether a superb plant.

Plants and flowers were exhibited by G. G. Hubbard, G. Evers, H. H. Hunnewell, M. P. Wilder, J. W. Foster, Barnes & Washburn, F. Winship, J. Waterhouse, J. Murray, M. Trautman, R. M. Copeland, J. Breck & Son, Miss E. Bruce, E. S. Rand, Jr., T. G. Whytal, J. Nugent, W. C. Strong, and others.

PREMIUMS AND GRATUITIES AWARDED.

PELARGONIUMS.—For the best six plants, to T. G. Whytal, \$6.

FUCHSIAS.—For the best, to H. H. Hunnewell, \$8.

For the second best, to Wm. Wales, \$6.

CALCEOLARIAS.—For the best six plants, to F. Winship, \$5.

For the next best, to W. C. Strong, \$3.

PANSIES.—For the best, to Barnes & Washburn, \$6.

GREENHOUSE PLANTS.—For the best collection, to Wm. Wales, \$15.

For the next best, to W. C. Strong, \$12.

For the next best, to T. G. Whytal, \$10.

For the next best, to J. Nugent, \$8.

SPECIMEN PLANTS.—For the best, to H. H. Hunnewell, for *Cissus discolor*, \$10.

For the next best, to T. G. Whytal, for *Fuchsia Venus de Medici*, \$8.

For the next best, to M. P. Wilder, for *Azalea decora*, \$6.

For the next best, to William Wales, for *Rhyncospermum jasmynoides*, \$4.

CUT FLOWERS.—For the best, to J. Murray, \$6.

For the next best, to J. Nugent, \$5.

For the next best, to F. Winship, \$4.

For the next best, to M. Trautman, \$3.

For the next best, to Barnes & Washburn, \$2.

HYACINTHS.—For the best, to Jos. Breck & Son, \$4.

For the next best, to R. M. Copeland, \$3.

GRATUITIES.—To M. Trautman, for displays, \$5.

To J. Breck & Son, for Hyacinths, \$3.

To M. P. Wilder, for collection, \$5.

To G. Evers, for display, \$3.

To T. G. Whytal, for Cinerarias, T. W. Walker, Jona. French, J. W. Foster, J. Waterhouse, G. G. Hubbard and Eben Wight, \$2 each.

To J. A. Holmes and Miss Harris, \$1 each.

Mr. Hunnewell's Fuchsias were, Duke of Lancaster, Venus de Medicis, Pearl of England, Omar Pacha, Revoluta and Star; Mr. Wales's were, Omar Pacha, Figaro, Clapton Hero, Glory, Venus de Medicis and Climax.

Obituary.

DEATH OF REV. A. R. POPE.—We record with deep regret the death of Rev. Mr. Pope, which took place Sunday, the 27th of May. His age

was 39. It was only in our last number that a communication appeared from Mr. Pope, on the Pea bug, which was written just before or about the time of his illness, and was probably one of the last things he ever wrote, as he was delirious from his first attack.

Mr. Pope was one of the most ardent lovers of Horticulture. Although deeply interested in his profession, and always active in the performance of his parochial duties, he found much time to devote to gardening. His early efforts were devoted to the improvement of our vegetables, and after many careful experiments and long attention he succeeded in hybridizing the Southern corn with our common Sweet, and produced the seedling known as the "Old Colony Sweet Corn," one of the most valuable additions ever made to our gardens. He also gave much time to the growth of the various kinds of vegetables, with a view to ascertain the best sorts and hybridize and improve them. His series of articles "On the improvement and preservation of Species," in a recent volume, (XXII. pp. 21, &c.), show how much he had studied the characteristics of plants with a view to their improvement.

Mr. Pope was an earnest advocate of the cause of education, and labored two years in its behalf. His close attention and unremitting labors to this great interest, as well as his ministerial labors, are believed to have overtasked his mind and body, and laid the foundation of his fatal disease.

He has passed away in the prime of his life and usefulness. Imbued with all the Christian virtues which elevate the character, he was warmly beloved not only by his congregation but by all who had the pleasure of his acquaintance, and his loss will leave a void in a very extended circle of friends.

Horticultural Operations

FOR JUNE.

FRUIT DEPARTMENT.

Notwithstanding the general impression, in the early part of April, that the present spring was a remarkably forward one,—at least two weeks earlier than last year,—it is doubtful whether vegetation at this time is any further advanced than last season. The greater part of May has been cool and damp, and, unless warm weather soon sets in, it will be a later spring than the last.

The weather, though cool, has generally been free from injurious frosts in this part of the country. Slight quantities of snow have fallen in places north and eastward, but to do no damage to fruit trees or crops. A fruitful season appears now beyond the reach of ordinary frosts and cold.

GRAPE VINES in the earlier houses will have ripened their crop, which will be ready for cutting. Keep the houses cool and rather dry, and they will hang till the later houses come on. No particular care other than this will be required for the present. Greenhouses and graperies will now

employ all the spare time of the gardener. Continue to top all laterals which have pushed afresh, and shoulder and thin out the berries. Keep the walks or floors well damped morning, noon and night. Maintain a good temperature in cloudy cool weather by lighting a little fire. Air more abundantly as the berries swell up. Cold houses will just be setting their fruit, and should be kept at an even temperature; damp the floors in sunny weather, and do not allow any cold draughts of air.

STRAWBERRY BEDS will soon be ripening their crop. Water freely if fine fruit is wanted, and place short grass, hay or straw under the plants to keep the fruit clean. New beds should be frequently hoed, to give the plants a vigorous growth.

PEAR TREES.—Commence summer pruning towards the last of the month. Thin out the fruit as soon as of sufficient size, and mulch and water trees intended for producing large specimens.

GRAFTED TREES should have attention; rub off all useless shoots, and loosen and untie the grafts. Tie up the rapid growing shoots to sticks, or top them to prevent their being blown off.

INSECTS should not be forgotten. The pear slug, jumping louse, aphids and others will attack the various trees, and they should be destroyed as soon as they make their appearance.

FLOWER DEPARTMENT.

June is the month for removing most of the plants from the houses, and replacing them with summer blooming plants, such as *Achimenes*, *Gloxinias*, *Fuchsias*, *Japan lilies*, &c. Select a good situation for the plants, and do not huddle them together in some out-of-the-way place, where they will be neglected. Look after them now as well as when in the houses. Many will need repotting, and all should be looked over carefully to see that the soil is in good condition. Some will need heading in, and others partial pruning, &c.

CAMELLIAS will soon be completing their growth, and setting their flower buds; as soon as this is perceived, discontinue syringing so abundantly and lower the temperature, and, by the last of the month, they should all go out doors in a half-shady and sheltered situation.

AZALEAS will now be growing rapidly, and to have fine specimens attention should be given to pinching off the young shoots, to make them compact. Syringe morning and night. Keep them well watered, and increase the temperature so as to encourage a free growth. Young stock may be repotted.

PELARGONIUMS will now be in full bloom; water liberally and air abundantly; shading for an hour or two in the middle of the day will preserve the bloom a long time.

ACHIMENES should be shifted into larger pots. Keep them well watered, as they delight in moisture.

CHRYSANTHEMUMS should now be encouraged in their growth; continue to pot off young stock and shift the older plants.

FUCHSIAS should have larger pots.

HEATHS, now turned out into good prepared soil, will make fine plants for next winter's stock.

CHINESE PRIMROSES should now be removed to a cool place, where they can have a slight rest. Seeds should be sown this month.

MONTHLY CARNATIONS may be turned out into the open ground, where they will bloom all summer and can be layered for young stock.

ROSES for winter blooming may now be repotted and plunged in the open ground, where they will make a fine growth.

ORANGE TREES may be plunged out in the open border, or planted in the ground, in a good rich soil.

CINERARIAS should be cut down, and, after a few days' rest, the roots should be divided and potted; place them in an old frame, shading them from the sun, and protecting them from heavy rains. Seeds may be sown now.

WINTER-BLOOMING PLANTS of all kinds need attention now; in order to have them strong and stocky, continue to repot as they need it, and disbud and stop all vigorous shoots, so as to ensure compact bushy specimens.

FLOWER GARDEN AND SHRUBBERY.

June is the month when the lawn and shrubbery should present its gayest aspect. The verdant turf, still invigorated with the genial spring rains, will give its brightest emerald hue—the varied evergreens display the soft tints of their fresh budding growth, contrasting with the sombre hues of the older foliage, and the flowering shrubs, arrayed in all the splendor of their many tinted blossoms. All artificial culture must be in unison with so much beauty. The lawn should be closely shaven—the borders neatly raked—and the walks as clean and smooth as the good housewife's floor. No dirt, rubbish, grass, leaves or anything should be allowed for an hour to disfigure the grounds. The work, too, should be done early in the morning, that so much that is pleasing may not be marred by perceiving the means by which it is accomplished,—and besides there is no need of keeping such jobs on hand a whole week. A little extra help completes it, and other work can be taken in hand.

BEDDING-OUT PLANTS of all kinds should be got into the ground as speedily as possible; make the earth rich and fine, and plant carefully.

DAHLIAS may be planted all the month; but the best bloom will be from those set out before the 20th.

TULIPS and other bulbs should be taken up the last of the month, that their places may be filled with flowering plants.

NEAPOLITAN VIOLETS should be divided and planted immediately.

RUNNING SHRUBS of all kinds should be staked and neatly trained up.

ANNUALS of all kinds, raised in the hotbed, should be planted out as speedily as possible.

HOLLYHOCKS should be staked and watered in dry weather.

INSECTS should be looked after; the thrip and rose slug will begin their ravages, and, if not checked by the timely application of whale oil soap, will destroy the foliage; two pounds to fourteen gallons of water is the proportion.

DWARF PEAR CULTURE.

ONE would suppose, from the numerous articles which fill some of our agricultural journals, that the growth of dwarf pears generally so called, or pears upon the quince, was a new and untried experiment, peculiar to American culture, and now for the first time ascertained to be contrary to nature, attended with failure, and unworthy the attention of any body but nurserymen, whose sole business appears to be, in the opinion of these writers, to propagate trees for sale, whether they are good for anything or not.

We are heartily tired of reading the wordy papers which appear annually upon this subject, and have discontinued noticing them, as unworthy the attention of intelligent cultivators. In our earlier volumes we have, time and time again, discussed the whole subject, and, as we supposed, proved, to the satisfaction of experienced men, that it is no new thing,—that two hundred years have been quite a sufficient time to test the success of the practice,—in fine, that it is quite too late to attempt to write down what has so long occupied the attention of practical cultivators in France and Belgium, and become an established truth.

But from the numerous letters which reach us inquiring our opinion in reference to the articles which have recently filled some of the New York journals, denouncing the quince stock as worthless, we have again concluded to devote a few words to a consideration of the matter, and to show—if there is in reality any need of showing—that pears upon the quince can be successfully reared, and that, in fact, it is the most profitable way of producing this superior fruit in abundance, and within any reasonable time. The old distich, that

He who plants pears
Plants for his heirs,

literally holds true with several kinds upon the pear stock. But fortunately, with some exceptions, by the aid of the quince, we can rear them almost as rapidly as the peach, and

certainly in far greater abundance, taking the average of years.

We do not intend to go into the whole subject, and answer all the objections which have been made to the quince stock ; this would occupy quite too much space, and be a repetition of much that we have already written. What we wish to do is to refer to the antiquity of pear culture on the quince, and the advantage which it possesses over the pear stock, bringing facts to support our argument which cannot be disputed.

We have not at hand the older works of the French writers on Pomology, and therefore cannot give the recorded dates at which pears upon the quince were extensively planted ; but referring to English notices we have the following, which we find in Bartram's correspondence with Peter Collinson in 1763. Mr. Collinson, writing to Bartram, among other things informs him, probably in reply to some query regarding the bearing of the pear, as follows : " What I am persuaded will prevent its dropping the fruit, if some quinces were planted in the lower part of thy garden near the spring, and graft them with the pear—it meliorates the fruit. By long experience all our pears are grafted on quince stocks, and succeed better than on pear stocks with us." Thus we find that one hundred years ago it was thought that the pear succeeded *best* on the quince stock. From that day to this, to say nothing of an earlier date, the quince has been extensively used as a stock, and the eminence that France has attained in pear culture is due, in a great degree, to the growth of the trees upon the quince, by which means her pomologists have been enabled to fruit and prove the numerous varieties which have been raised, in one quarter part of the time that it could have been done upon the pear. In all the French works on gardening, from Quintinye to the latest writer, M. Dubreuil, the quince has had the highest commendation as a stock for the pear. Thus we find that the experience of one hundred years, without a single objection that we can learn being urged against it in that time, and raised too upon the most extended scale, is quite as good proof of its adaptedness to the pear, as the hasty, partial and unskilful experience of some of our American cultivators, who consider themselves, without yet

possessing a healthy bearing tree, learned out in dwarf pear growing.

We now come to the advantages which the quince stock possesses over the pear. And here we have facts so well authenticated that there is no question as regards their truth. In the *Transactions* of the London Horticultural Society (Vol. VII. p. 213) is an article by an experienced cultivator, Mr. Torbron, gardener to the Countess of Bridgewater, upon the "Advantages of grafting Pears upon Quince stocks," and although we have noticed the results which Mr. Torbron arrived at in a previous volume, we now copy his entire article, that there may be no question of the truth. It was read before the Society, June 2d, 1827. It is as follows:—

For several years I have been of opinion that perhaps there are few or none of the sorts of fruit that come to maturity in this country, without the aid of glass and artificial heat, that merit more attention and encouragement than pears, considering the long space of time that they may be had for the table. For where there is a judicious selection, and soil and situation suitable, they may be supplied with but little intermission from July till May following.

One great improvement in the cultivation of the pear is a method practised many years ago, but not generally enough adopted: that of the choice sorts being grafted upon the quince, by which they come some several years sooner into bearing, and produce much better crops than those upon the common or free stock.

I have had opportunities of seeing the superiority of the quince stock in three different counties, and with as many different sorts of soil, and have not found any disadvantage whatever in it, although some disapprove the use of it. I think the objections are made only by those who have not given the two sorts of stocks a fair trial. Pears on the quince require less wall room at planting; but an equal space of wall, occupied by trees on quince, will produce from three to five times the quantity of fruit which could have been obtained from trees on free stocks, or in some cases still more, and the fruit will be in no respect inferior.

In the last season, having had a general crop of fruit, I have with accuracy ascertained the difference of the produce from the two kinds of stocks, which I beg leave to submit for your information:—

Gansel's Bergamot on quince,	2 trees.	{ The quince exceeds }	as 15.1 is to 1.
The same sort on the Free,	3 trees.	{ the Free in quantity }	
Brown Beurré on the quince,	4 trees.	{ The quince exceeds }	as 4.4 is to 1.
The same sort on the Free,	3 trees.	{ the Free in quantity }	
Crassane on the quince,	2 trees.	{ The quince exceeds }	as 8.2 is to 1.
The same sort on the Free,	2 trees.	{ the Free in quantity }	
Colmar on the quince,	2 trees.	{ The quince exceeds }	as 2.8 is to 1.
The same sort on the Free,	2 trees.	{ the Free in quantity }	
			30.5 4

And 30.5, divided by 4, gives 7.6 as the average in favor of the quince.

The fruit of each of these trees was measured by gallons and counted in numbers, each tree separately, and the space of wall occupied by each tree was ascertained in superficial feet.

Those on the free stocks occupied much more wall space than those on the quince did; but those on the quince produced much more fruit (as above stated) than those on the free.

Those on the quince were planted in 1818, 1819, and 1820, maiden trees, of one year's growth from the bud; they made scarcely any progress the two first years after planting, till a more suitable soil was obtained and applied to their roots; since that they have thriven exceedingly and produced fruit in abundance.

The pear trees on free stocks were all nearly eighty years old, and, previous to 1818, extended over from forty to sixty feet of twelve foot walls, but for several years they had been unproductive, being crowded with old wood, and long projecting spurs. They were all cut back in 1818, 1819, and 1820, nearly close to the trunk, and that was also cut down three or four feet above the surface of the ground. These trees now occupy individually from twenty-four to thirty feet of the same walls, are furnished with healthy and fruitful wood, being quite renovated, and bear as much as trees of the same sorts that were planted in good fresh soil and against new walls from twenty to twenty-seven years ago, and from which, from their age, may be said to be in their prime of bearing.

We might satisfactorily conclude our article here, but as there are some peculiarities in quince culture, as well as in other trees and fruits, we may advert to them as connected with success or failure, and the neglect of which has undoubtedly been the cause of all the objections which have been made to it as a stock for the pear.

He who would plant a pond lily on a sand bank, with the expectation of obtaining an abundance of flowers, would meet with that reward which always accompanies ignorance; or, to make a more appropriate comparison, the cultivator who would plant a willow on a gravel bank, and expect it to thrive and become a beautiful and long-lived tree, would undoubtedly be doomed to bitter disappointment. There are certain considerations which must not be neglected in the growth of most trees and plants. Even the cherry entirely fails in many parts of the country, owing to uncongeniality of the soil and situation, and we see not why this favorite tree should not be denounced as well as the dwarf pear. In our experience we have lost ten cherry trees where we have lost one pear.

What is the history of the quince? From the most authentic sources we learn it is a native of Southern Europe. According to Philips the quince was called *Cydonia*, after an island in the Mediterranean, now named Candia. He also tells us it grows wild on the BANKS OF THE DANUBE. Knowing this, and knowing too the character of its roots, so different from the pear, as well as the habit of the tree, we learn what situation it requires for successful cultivation. We cannot oppose nature, but we may aid her in many ways. We cannot, therefore, rear the quince on a sand or gravel bank, or in a tough clay. We cannot even raise it on a rich soil, unless very deep, if underlaid by a hard or hungry earth. The roots are small, fibrous, and to some extent, we are inclined to believe, annual; that is, they are renewed, like all shrubs or small trees which throw up suckers readily, and at the same time make fresh roots to support the new growth. Left to itself, as we have seen the quince tree forty years old, it becomes a many-branched, dwarfish tree, some of the old stems dying out, their place being supplied by others from the outside, which extend and penetrate their rootlets into fresh

earth, and impart new vigor to the branches. Those growing in low grounds, near a moist subsoil, even without any other culture than keeping the earth annually stirred, are laden with their huge golden fruit every year. In the town of Sandwich, Mass., two weeks ago, we saw quince trees with five to ten stems, each as large as our arm, forming heads ten feet through, all in perfect health, and covered with the incipient fruits just set. In Newport, R. I., we have seen quince trees one hundred years old, and more than twenty feet high.

So much do we know of the history of the quince and the wants that it requires at our hands. Unless, therefore, we give heed to these wants, we cannot expect to succeed in its growth, and still more when we cut off the sources of nourishment which it naturally gets by limiting it to one stem, and suppressing the suckers. We must study the means to supply what we rob it of. How is this to be done?

FIRST. By selecting a naturally moist and deep soil.

SECOND. By judicious planting, placing all the quince stock even with, or two or three inches below, the surface of the soil, that it may be kept moist, and expand with the growth of the tree.

THIRD. By supplying the roots with plenty of nourishment by the addition of enriching substances, such as well rotted manures, or with guano, phosphate of lime, or other concentrated materials, or by a renewal of the soil when it becomes exhausted.

FOURTH. By limiting the size of the tree to the quantity of roots; and

FIFTH. By not allowing the trees to bear more than they can sustain and keep up a healthy growth of branch and root.

These several things must all be attended to, and if they are, the pear upon the quince becomes one of the most bountiful of fruits, richly rewarding the cultivator for all the care he can bestow upon them.

Let those who wish to deprive themselves of the gratification of eating delicious pears ignore dwarf trees. They will find too late what a little experience and some knowledge would have enabled them to enjoy.

HOME ARCHITECTURE.—No. IV.

BY WILSON FLAGG.

ORNAMENT—CONCLUDED.

THERE is a species of ornament that consists in relieving the baldness and glare of a perfectly smooth surface by figures, which, either with or without meaning, serve to make it agreeable and satisfactory to the eye. A smooth, glaring surface of considerable extent fatigues the sight without affording it exercise or amusement. This remark may not always apply to the glossy sheen of a collection of water in the landscape, when it is but a small part of the whole view, and is relieved by the trees and shrubs that embroider its banks. But were this smooth water spread out immediately under our windows, forming a greater part of all that could be seen from them, we should soon grow as tired of its smoothness as of its monotony. A stone building, which is smooth and polished on the outside, without any projections to relieve it, is never contemplated with satisfaction. Hence rough stone is generally preferred, not on account of its greater cheapness only, but on account of the more agreeable surface it presents to the eye. As a relief to this effect, projections over and under the windows are found advantageous; and sinuosities, made by bevelling the corners of the separate blocks at their junctions, are employed to answer the same end.

Builders sometimes carve upon a smooth ground a uniform series of regular or irregular figures, like diamonds or leaf-work. The latter is the most effectual, because a ground marked with perfectly regular figures partakes, in a measure, of the same staring quality which is offensive in a uniformly smooth surface. We observe this quality in a remarkable degree in a striped ground. The outside of a wooden dwelling-house, in which the boarding is carved to represent blocks of stone, pleases more than one that is faced with smooth boarding; and a smooth painted surface, when sanded, pleases more than if it were polished. Our preference does not arise, in either case, as many have supposed, from perceiving in it an imitation of stone, but from physical causes—from its

effects on the organs of sight. I have seen small cottages in the country faced with shingles rounded at their projecting ends, making a kind of rude imitation of shell-work. This is a very neat ornament for one of a simple kind, and it is agreeable in proportion to the small size of the shingles. It serves the useful purpose of giving rest and relief to the eye, which must always become fatigued when it is obliged to look upon a smooth polished ground of wide extent. Indeed, the eye is always instinctively averted from such a surface to something, however ugly, that will afford it either rest or agreeable action.

It may seem paradoxical to assert that the two opposite qualities of smoothness and harshness may produce the same effects. But there is a harshness both to the touch and to the sight. Every smooth, glittering surface is harsh to the sight, because it sends flashes of light into the eyes. Hence the custom of painting the interior of a house with a mixture that produces no gloss, and hence the custom in some instances of using furniture without varnish. A sprinkling of sand over a coat of paint derives its advantages from this principle, and white paint would lose half the objections to its use, for the outside of buildings, if something could be added to it to destroy its glare. Polish is applied to household utensils, and to most articles of furniture, for neatness and convenience. But polished ware is not so agreeable to the eye as it would be with a fine-grained surface without polish. Objects only of extreme minuteness are improved by gloss.

Satin housepaper is preferred to other paper, because its polish prevents it from becoming readily soiled, and allows it to be easily cleansed; but its glitter is offensive. The most approved housepapers in present use, among expensive sorts, are velveted with a cotton nap, produced by throwing cotton dust over a glutinous surface. There is more philosophy connected with this question of smoothness and roughness, of glitter and dullness, than with many other subjects that seem more profound. By studying with close analysis the reasons of certain preferences which mankind have often exhibited, for the one of two objects that seems the less beautiful, we may arrive at this philosophy.

The kind of ornamentation of which I have been treating introduces no distinct images to the mind. Its effects are entirely organic. It gives repose to the building or other object to which it is added. Hence a fluted pillar is more agreeable to the eye than a smooth one; yet I am persuaded that a pillar, covered with uniform leaf-work or shell-work, would be more agreeable than either, as stripes or parallel lines produce a dazzling effect upon the sight. It is better that this work should produce no very definite images to the sight, as the latter have a tendency to divert the mind, which should in all cases be employed in contemplating the general appearance and purposes of the building. Any ornament that diverts attention from the building to itself, however beautiful, is false and inappropriate. This is the fault of statuary as an architectural ornament. It cannot harmonize with the building, because it is either no part of it, or it is a monstrosity. The same objection may be made to the introduction of any specific objects as ornaments. In leaf-work or shell-work, the shells and foliage are to be blended into one mass; otherwise the single shells or single leaves would present a too distinct image to the mind.

With regard to leaf-work, it may be remarked that besides relieving the baldness of a smooth ground, it affords a pleasant sensation of nature, who adorns the outside of all objects in the landscape with the same kind of ornaments. A rock, covered with lichens, is more pleasing to the sight as well as to the mind than a bald rock; and one with a rough surface in nature is preferred to a smooth one. An old building or an old wall, covered with ivy, is always pleasing. If the outside were covered in such a manner as to imitate ivy, the effect would be similar in a less degree, and not always in proportion as the imitation is perfect, but in proportion as it served to produce the mental and physical sensations occasioned by natural leafage. Polished surfaces are generally considered more beautiful than rough surfaces; but it must be admitted that in numerous instances the beautiful affords less pleasure to the sight than something would in the place of it that is wanting in beauty. This principle a master of his art always understands; and while the tyro in landscape painting will

spoil his pictures by making his flowers too bright and his leaves too green, and his colors in general too beautiful, the master, by using homely colors and more indefinite outlines, creates a landscape that captivates every beholder.

Ornamentation, philosophically regarded, is indeed a noble part of architecture, inasmuch as it is a noble art to distinguish the true from the false, and relevant from irrelevant decoration. In the same sense it might be remarked, while deprecating all excess of ornament in dress, that the arts of the tailor and of the dressmaker are among the noble arts, if properly directed. But the tailor should be a man of cultivated mind, an artist in the highest sense, a man of taste and a philosopher; and it should be a part of his vocation to guide the fashions and taste of the public, instead of suffering himself to be a mere mechanical tool in the hands of fashion. The architect, for the same reasons, should be a philosopher; not a mere blind imitator of the ancients, or of the moderns; not a mere slave to certain canons of his art, reduced to the level of the poor priest who is obliged to preach, not what he believes, but some absurd dogmas which are embodied into his creed to test his subserviency to the church.

It is customary at the present time to prefer the ornaments of the Gothic to those of the Grecian style of architecture, and this preference seems to be just. The Greeks were enslaved to certain arbitrary rules of art, both in art and literature; and these rules, though they undoubtedly served to carry a particular style of art and of literature nearer to perfection, yet they were obstacles in the way of the perfection of general art and general literature. If a despotic canon of modern art were to declare that all except brick houses were in barbarous taste, such an edict would undoubtedly lead to perfection in the art of constructing brick houses; but it would prevent the nation from attaining perfection in architecture, as applied to all other modes of building. Grecian taste, which was governed by laws more despotic than the mandates of an eastern monarch, admitted of no improvement except in one direction. Roman art possessed a little more freedom; but art obtained no perfect freedom until the Catholic religion made some feeble amends for binding human reason in chains by emancipating art.

During the age of Paganism in Europe, reason was free, but art was enslaved. When Christianity was established, reason was enslaved, and art was set free. After the Reformation, as reason had gained some portion of its ancient freedom, there was evidently a general tendency to bind art and literature again in Grecian chains. This was shown in the revival of the Epic poem and the Grecian temple, both equally sublime, equally beautiful, and equally absurd. Mr. Ruskin has done more than any other writer for the emancipation of art; and it will now be very generally conceded, that the rules of art, like the laws of nature, should be general, not systematic; that art should not be confined by any arbitrary rules, but as wide as the universe in the selection of its models, and as uniform as nature in always resolving itself into utility.

It ought to be remarked, however, that art may be enslaved to Gothic as well as to Grecian canons. Art cannot be free unless it is eclectic, and the arbitrary rules of a system must not be mistaken for the general laws that guide a rational artist. A profusion of spires and pinnacles, of gables and pendants, for mere ornament, would be as great an error in a modern Gothic building as a profusion of columns in a modern Grecian building. For simplicity, in a plain wooden building without ornament, the Grecian forms are preferable; but I think the majority would concede that a custom-house in the Castle Gothic style, modernized by omitting its redundances, would be more pleasing, more magnificent, and certainly less expensive, than one in the style of a Grecian temple.

Fanciful structures, which are designed to exercise the imagination, afford more pleasure in the Gothic than the Grecian style. But in wooden dwelling-houses, it seems like affectation to employ the Gothic forms, since wooden buildings mechanically admit only of the lintel and its perpendicular supports. All that mechanically arranges itself in the arched or pointed form is the roof and the gables of wooden houses. It is otherwise in houses of brick or stone. In these structures many of the Gothic combinations are appropriate and economical; and the arch may be employed with sense and advantage over doors, windows and porches, and in many

other situations. If there be anything in the form of an arch, like sweet to the palate, or crimson and purple to the sight, that affords, independently of association, an agreeable organic sensation, the arch is certainly a legitimate contrivance to improve the beauty of a building constructed of materials which mechanically require it.

It has been my object to discuss the moral and physical effects both of the presence and absence of ornament, and to point out its legitimate purposes. I have maintained that dwelling-houses of every description are pleasing in proportion as they affect the mind agreeably without the aid of positive beauty. In maintaining this ground, I am aware of the liability of being misapprehended, or at least of being imperfectly understood ; but there is an important principle involved in it, a principle which prevails throughout the works of nature, and which is understood by the great masters of landscape painting, but is overlooked by the leaders in modern architecture.

EFFECTS OF FROST ON VEGETATION.

BY THOMAS MEEHAN.

I DERIVED so much pleasure from the perusal of your first article, that I very reluctantly took my pen to controvert a single point I thought erroneous. Moreover, that article was from the editor's pen, and I felt the same delicacy in the matter that one would naturally have in going into another man's house to find fault with the arrangement of his furniture. For your kind attention to my queries, notwithstanding my trespass on your editorial mansion, I am greatly obliged ; as, I assure you, I have profited much by many things you have said.

Now that Mr. Sargent has come to your aid, I feel in a better position, and will, with your sanction, express myself more clearly than I have done in the interrogatorial form I before adopted, through respect to your position as editor.

You thought it was "damp cold which was so very injurious to vegetation : " in other words, the dryer the atmosphere

around a tender tree or shrub, the better chance it had to get through the winter uninjured. I objected to this doctrine, for this reason :—I have been for some time leaning to the belief that the immediate cause of death by frost, is excessive evaporation,—in opposition to the older idea that it is by a disruption of the cells. It follows that, if this theory is correct, the editor's idea about damp cold must be erroneous, as the damper the atmosphere is, the less evaporation there will be from the plant it surrounds. The important point then is, how does frost act in destroying vegetation—by drying out its moisture ? or by the disruption of its cells ?

Singularly enough, Mr. Sargent's article, intended to support the latter view, in my judgment leads to the other conclusion. He instances the well-established fact, that exposure to the hot sun, after a night of intense cold, is much more destructive to a tender evergreen or half-hardy plant, than it is to a plant partially protected—by the shadow of a house or wood. Also, that in February or March, plants suffer more injury than at Christmas or New Year. Any one will see at a glance that these instances do not favor Mr. Sargent's position any more than mine. I might say the sun caused rapid evaporation,—Mr. S., that the rapid thaw burst the cells. But another point in Mr. Sargent's letter, when examined, will show that when the hot sun is accompanied by moisture, the plant is no more injured than if growing in the shade. In other words, that it is the moisture of the atmosphere, by placing a thin veil between the sun and the plant, and thus arresting evaporation, that saves its life. The point is this : Evergreens stand better in England than with us, because of the absence of our hot suns ; but it is a little remarkable, that evergreens stand best in the south of England, where the winter suns are the hottest, than they do two or three hundred miles north, till they come to the moist air of the mountains of Scotland, where, notwithstanding the lower temperature, they still never suffer so much as on the borders.

In the Isle of Wight it is not unfrequent to find the thermometer, after a cold winter's night, 50° at midday, while in this latitude it is unfrequent to find it rise as high as 60°, though I have once seen it do that when the thermometer,

the morning before, indicated but 5° above zero. Yet in that part of the country, where the suns in winter are the hottest, and I have known the thermometer fall to 22°, myrtles and camellias will remain uninjured, on a south wall, exposed to the hot sun; when in a more northern and *dryer* climate, with a very little more frost, and less sun, they would not dream of seeing such things. Would a myrtle or camellia, with any amount of shade from hot suns by woods or buildings, stand 22° of frost, in Philadelphia, New York or Boston? Would it stand 5°? I apprehend not.

Depend upon it we have to deal with evaporation and not with broken cells; unless we speak of geraniums and other soft-wooded plants, which, by their rapid decay afterwards, show that their tissues are actually disorganized.

Is it denied that there is no evaporation from vegetable structures in frosty weather? Or that evaporation is not greater in proportion to the lowness of the temperature? I have that yet to learn. If there is, is not a plant that by its foliage (as evergreens, broad-leaved ones especially,) requires a large supply of moisture to supply evaporation in winter, when its roots are so frozen that it *cannot absorb moisture* from the soil—is not a plant in such a case in just the same position as a plant under a hot sun and no moisture at its roots? and death as natural a consequence in the one case as in the other? Has any anatomist ever discovered that the tissues of ligneous plants are disrupted by frost, which could be easily ascertained by a powerful microscope, were it so? And why should freezing and thawing disrupt the cells? If they are able to stand an expansion once, why not to the same extent again without injury?

Excuse, Mr. Editor, my obduracy and “hardness of heart;” but the more I think over the matter, the deeper I seem to sink in my heretical opinions. Had I a Baobab tree, which in tropical climates they say grows over twenty feet thick, and could place such a specimen out in my garden for but one Philadelphia winter, though the frost would not be able to penetrate one foot into its trunk to disrupt tissue, I know it would be dead, dry, to its ten feet centre, by spring, just as

certainly by evaporation, as if it had been suspended a few score yards above a large prairie fire.

My theory has been of great service to me the past winter. Late in December I bought some large box trees or bushes to ornament my grounds. One of them was probably over one hundred years old. I was advised not to move them till spring, as I had to bring them ten miles; but "strong in the faith," I went to work. As soon as I had them home, and planted, I set to work to regulate the evaporation. I first got the shears and cut over the whole bush about a foot deep, obtaining from my large plant enough cuttings to plant one hundred and twenty yards of box edging, without much reducing the apparent size of the bush. Then I had bundles of corn fodder set up around each bush, so as to leave but about one stalk in thickness all round; then by the help of two men, and some tar band, each bush was drawn tightly towards its centre, and so secured.

On the *north side* of one of my bushes the corn fodder was but imperfectly secured, and it fell off in the course of the winter. This exposed part was killed in the winter, and still remains brown and leafless; the other part, and the whole of the other trees, are as healthy as if never removed. There would not have been, I think, found more than five degrees of difference, certainly not ten, between the interior of a bush and the external air, and the thermometer was once 5° below zero;—yet, unprotected, I have no doubt they would have been destroyed by 10° or 15° of frost; as the exposed part, where no sun reached, but *cold dry winds did*, has been.

Some of my customers have complained, that though they cover up their tender roses with straw and cedar branches, and take good care to keep them well protected *from the sun*, they die nevertheless. Last fall I advised them to bend them down on their flower-beds, place a few cedar branches or coarse litter on them, and then cover with soil, so as to keep a "moist coolness" about them. And they are now envied by their neighbors who "can't understand why so and so's roses are doing so well, while theirs, so well protected by straw, have died out." One lady friend almost tires me with her praises of her Lamarques, Pactoles, and Devoniensis, which

were always cut down before. So that you see I am turning this evaporation theory to good account, while I do not see what I can gain by a belief in disruption.

The subject, as we have already said, is one of much importance, and we should be glad to answer all Mr. Meehan's objections to our view of the question; but as we should occupy space which must be devoted to other matters, we simply offer a few remarks, which we think cover the whole theory of the effect of frost on vegetation.

We do not see that Mr. Sargent's views at all support our correspondent's idea of "excessive evaporation." If, as Mr. Meehan says, injury is the result of excessive evaporation, why, we would ask, do not our hemlocks and white pines, and our native rhododendrons and hollies, get injured every cold winter? It may be answered that they are hardy. But what has this to do with the question? Evaporation will take place just as readily in one case as the other. Why will not the *Rhododendron ponticum* stand our winters uninjured? Simply because it is not hardy. And yet one or two or three good frosts will not hurt it. If it is not freezing and thawing that does the injury, but excessive evaporation, why will it not stand the same dryness of a native species? Will Mr. Meehan explain.

The only reason why evergreens stand better in the south of England than the north, is that the winters are not only less severe, but of shorter duration—as we have already said, every freezing causes additional injury—and as Mr. Sargent states, the slight freezings and thawings of December do but little harm; it is in February and March, when the intense sun thaws the plants every day and freezes them again every night, that they suffer.

We are utterly surprised to hear Mr. Meehan state that the camellia will not stand 22° of frost; it will stand 32°, and we do not know but more. Why, in the neighboring city of Baltimore the camellia thrives in the open air better than the less hardy rhododendrons do here. The late Dr. Edmonson of that city planted out hundreds of seedlings, which not only stood the winter with the temperature at zero, but flowered

as finely in April, 1848, as if they had been in the greenhouse. We saw these plants in 1845, before they were planted out, when they were wintered in a shed *open to the north*, with nothing but a covering of leaves to their roots. They were in perfect health and foliage. In 1849, the thermometer fell to 4° below zero, and although the foliage was disfigured by the severe temperature, they yet flowered. Mr. S. Feast, in noticing these plants, says their injury was doubtless owing to the "extreme warm month of January, which started the sap, and the sudden cold coming upon them in that state, (4° below zero), which forty-eight hours before had been varying from 65° to 75° ."

Now was it "excessive evaporation" that disfigured the foliage? Three previous winters they had not been harmed, and yet the fourth, with the sudden change above noticed, they suffered. It was the freezing and thawing of the plants alone which caused the damage. The camellia, we have no doubt, by successive seedlings and a selection of a proper location, may be made hardy at least as far north as Philadelphia, if not as far as Boston. We kept a camellia out two winters by protection with straw, and the death of the plant we always attributed to the "damp cold" alone. We intend to try the experiment again.

Without following Mr. Meehan in reference to his experiment with the Box trees, we must assuredly believe, if he reflects well upon the subject, he will find "excessive evaporation" a pleasant hobby to ride, but an ill one to practice.

NOTES ON GRAPES.

BY GEORGE W. CAMPBELL, DELAWARE, OHIO.

I NOTICE a remark in your "Pomological Gossip" for June, while referring to the opinion of Dr. Grant and others as to the comparative merits of the Delaware and Rebecca grapes, for which I am at a loss to account. You say: "We should say the Rebecca quite equals the Frontignan, and the Delaware a perfect counterpart of the Red or White Chasselas, as

it has not the least flavor," &c. Were it not that you remark in the next paragraph that "the beautiful pinkish red of the Delaware is *one of its many excellent qualities,*" I should have concluded you were "down" upon this delightful acquisition to our hardy grapes with a perfect *extinguisher*. But I trust you did not really mean what was expressed, and that there is some "mistake in the printer" this time. In this vicinity the Delaware, as it grows older, under good management, improves in every respect. The vine acquires greater vigor of growth; the berries and bunches increase in size, and I think also in quality and richness of "flavor."

I am very glad to learn that you have found the Rebecca "hardier than the Delaware;" for, if it also proves vigorous and healthy, this is all that is wanting to give it a permanent place in the regard of every lover of horticulture. The Delaware vine, when the wood is well ripened, will endure almost any amount of cold, as I have fully tested. During our late severe winters, I have had young cuttings started the previous spring, together with vines from two to three years old, standing wholly unprotected in the open ground, and these all endured a temperature as low as 23° below zero, without the least injury. The last winter, however, has been more severe upon vegetation, with less cold. The early portion of the fall was mild and rainy, kept the wood growing very late, and consequently not well matured. Cold weather came suddenly, and the thermometer sunk to 12° below zero in November. This killed the peach blossom buds in this region, and many of the trees. The Catawba, Isabella, Diana, and even the Clinton vines were also found killed to the ground this spring, where standing unprotected in the open garden. In elevated and tolerably dry situations, the Delaware escaped injury; but in low, rich garden soil, for the first time in my experience, the ends of a portion of the wood were killed. The winter afterward was comparatively mild, causing many trees to swell their buds prematurely. During the months of December and January, the thermometer much of the time ranged from 35° to 40° at sunrise. February was somewhat colder; but in March the thermometer sunk lower than during the whole winter, indicating on the third, 7°, and on the

seventh, 4° below zero. This was also very destructive to vegetation, which had partially escaped the cold of November, destroying some fine cherry and plum trees, which had withstood the severity of our former hard winters.

A word as to the *Logan* grape, of which I exhibited a few small and imperfect bunches from the first bearing of a young vine, at your Horticultural exhibition last fall. This vine has endured the past winter, and indeed all our late severe winters perfectly. It is the hardiest vine I know; and I am glad to say it proves to be not only of remarkably vigorous growth, but easy of propagation. The size of the bunches appears at least double that of those set last year; and though my bearing vines have an unfortunate exposure, in a north-east angle of my house, I think the fruit will ripen by the first of September, as the season is somewhat earlier than the last. I shall do myself the pleasure to send you specimens of the grape when ripe, and hope to make a more satisfactory show at your next Fall Exhibition.

We sometimes think the best way we can serve the interests of pomology is to denounce every new fruit that is brought to notice. We then get at facts, and obtain information from those who really have it to give. Now, but for our few remarks about the Delaware grape, we should not know near so much about it as we learn from the above communication, and incidentally about the *Logan*, too.

However, our remarks were in no way intended to disparage the grape, but on the contrary were in praise of it. We do not retract anything we said. We still believe there is just the difference in the *Rebecca* and Delaware that we described. We are only surprised that Mr. Campbell should not be sufficiently acquainted with the qualities of the *Chasselas* grapes to think the comparison in any way lessened the value of the Delaware.

If France is celebrated by any one thing in fruits, it is for the superlative excellency of her *Chasselas* grapes. Those grown at Thomery have a world-wide reputation. Even the *Frontignans* are not considered equal to them, and they command the highest price in the market. We said the Delaware

was a complete counterpart of the Red Chasselas, but we might have named the White as regards flavor, only that the Red, or Rose as it is sometimes called, would convey a better idea of the similarity of the two. They differ but little, if any, in quality. To say that a grape is equal to the Chasselas is the highest praise that can be given to a variety.

Perhaps we did not express ourselves clearly in saying the Delaware "has not the least flavor," because that would be incorrect; what we meant to say was, that it has no characteristic flavor of its own. Certainly the Chasselas has flavor, but then it is of that simple kind which is peculiar from its delicacy and honeyed sweetness; and the Delaware is just like it, lusciously sweet and rich, but leaving to the taste none of that aroma peculiar to the Muscats, and which give them their delicious quality.

We prize the Delaware as one of our best grapes, but we still think there is just the same difference between it and the Rebecca that there is between the Black Hamburg and Muscat, or the Chasselas and Frontignan. It is, of course, a mere matter of taste—many individuals considering the Hamburg the best of all grapes.

We are pleased to hear so favorable an account of the Logan. We were highly gratified at the appearance of the specimens alluded to by Mr. Campbell, and only regret that we did not have an opportunity to taste them. The jet black color of the berries and the compact and handsome form of the bunches struck us as remarkable, and something quite new among grapes. We shall be delighted to receive the specimens of the Logan the coming autumn, and shall then be able to speak from personal experience.

HERBACEOUS PÆONIES AND BEE CULTURE.

BY DR. J. P. KIRTLAND, CLEVELAND, OHIO.

THREE years since, you had the goodness to send me half a dozen of the new varieties of the Belgian herbaceous pæonies. They have recently flowered, and have raised no small excitement among the florists of this vicinity.

In the third volume of the Horticultural Magazine you gave an interesting account of the several species and varieties of the pæony then cultivated in this country, and in vol. 18th, descriptions of twenty-six new herbaceous varieties.

Notices have also occasionally appeared of the old and of new varieties of the Tree pæony. With all these communications before the public, little seems to be generally known of the beauty and worth of this family of plants. If spoken of, no other flower is brought to mind than the prototype, the old fashioned double red, which occupied a prominent position in the flower borders of our grandmothers, but which modern progress has either banished from our gardens, or has assigned to it some obscure corner.

Both the herbaceous and the tree varieties are destined soon to become the most popular of our hardy perennial flowers. The former varieties are hardy in all soils, properly drained. The latter in my garden, which is a dry and gravelly formation, requires no protection; but in less favorable locations in northern Ohio, it needs to be surrounded in autumn with dry leaves, secured in place by turning over the whole a suitable sized box or barrel, so arranged as to keep them dry. All kinds are rank feeders, and require as high cultivation as the rose and the grape.

I am not aware that any one in the United States has practically carried out your suggestions in regard to producing new herbaceous varieties, which may be found in Vol. III., p. 290, Hort. Mag., but it is evident from your article in Vol. XVIII., p. 360, of the same journal, that anterior to the year 1852, the Belgians had made successful progress in that direction. What has since been accomplished I have no means of ascertaining, and my object in addressing you at this time is to suggest that you favor the readers of your journal with an article which shall embrace an account of all that has been accomplished since the above named year.

No more pleasant and interesting amusement could engage the attention of our amateur florists than the raising of new varieties of this plant. The method which I finally pursued, after many and varied attempts at producing improved varieties of the cherry, would no doubt be equally successful with the pæony.

Some five years since, Col. Wilder very kindly forwarded to me a semi-double Tree pæony, with the suggestion that from it I might produce new varieties. Faithful to his suggestion, I engaged in the undertaking, and am happy to say, that I have already a crop of young seedlings growing rapidly, and the last year's seeds preparing to vegetate the next season. With me this process takes two years. Can it be expedited by scalding the seeds, or by other management? What single species or variety of herbaceous pæony is the most prolific and certain in producing perfect seeds? Does such variety flower at the same time with others? Can the pollen be preserved for use for any considerable time?

Naturalists would not arrange the honey-bee in the floral department, yet by use it has very properly been attached to it as a kind of appendage. They work well together. To such persons as take an interest in cultivating this insect, I would say, that, under Langstroth's system, I have succeeded to the fullest extent of my wishes. By it I not only handle, move and govern my colonies with as much ease, facility and security as Van Amburg manages his lions and tigers, and Rayner the vicious individuals of the equine race, but am enabled to destroy every interloping moth and worm. As these latter have for half a century proved the great impediment to the labors of the apiarian, their successful counteraction is restoring bee culture to its pristine and favorable results.

These statements are made with hesitation. They may, in the estimation of some people, savor a little of *Munchausenism*. Their skepticism, however, would vanish if they were to see me open my hives, remove every bee, and every portion of comb, brood and honey, and then to capture every depredating worm and moth, sweep out all accumulations of filth—dead bees, millers' eggs, &c.—and finally to replace the colony, without disturbance or loss of a bee; this, too, in presence of the most delicate individuals, ladies and young persons.

Our fruit prospects are bad. Limited quantities of all kinds will be produced in the vicinity of Lake Erie, and of very inferior quality. A series of unfavorable contingencies have blasted the fine promises the early spring held out.

We shall take an early opportunity to comply with Dr. Kirtland's request. We are pleased that he has brought the pæonies to the notice of our readers. Certainly the magnificent sight which we now daily enjoy, and which we were just revelling over when the Doctor's letter was placed in our hands, need only to be seen to exclaim in perfect truth, "how little seems to be generally known of the beauty and worth of this family of plants!" We have now EIGHTY VARIETIES of herbaceous pæonies in flower, occupying several large beds 100 feet long, and if an inspection of them would not awaken a passion for flowers in every one not wholly insensible to the beauty of plants, then there is nothing in the floral world that would.

NEW ENGLAND SHRUBS.

BY WILSON FLAGG.

THE DUTCH MYRTLE, (*Myrica gale*.)—Along the banks of rivers, and the wooded shores of ponds and lakes, grows a prim, slender, and rather elegant plant, with dark and dull green foliage, possessing a very agreeable odor, perceptible on crushing the leaves. This is the Dutch myrtle. It is found only in wet places, where it grows in knolls or copses, from which, by their density, almost all other shrubbery is excluded. This gregarious habit is probably owing to the tenacity of its roots, that form a subterranean net-work, nearly impenetrable by the shoots of other plants. It often grows directly out of the water, like the Button bush, that affects similar localities. Indeed it is rarely seen in grounds which are not submerged in water the greater part of the year. This is the plant that regales the sight with its fresh verdure, rising out of the bosom of the water and forming little islands of shrubbery, through which, on angling excursions, we propel our boat, while the glossy surface is spangled with white and yellow water lilies, which, in company with the long, blue spikes of the pickerel weed and a host of small aquatic flowers, give the scene a genuine tropical splendor.

But a still more interesting shrub, on account of its frequency in pastures and hilly lands, is the Bayberry, (*M. cerifera*), sometimes called the Candleberry myrtle. It might be difficult to prove that this shrub has any pretensions to beauty, being destitute of perfect flowers, and very crooked in the growth of its branches. But its foliage is as precisely regular as its branches are irregular in their growth. It is also of a fine glossy green, and forms some of the finest masses of foliage to be found in summer on the hills of New England which have been cleared of trees. Not one of this family of plants, however, is tinted in the autumn; like exotic shrubs, they retain their verdure until the fall of their leaf. Their beauty consists alone in their bright green summer foliage.

Allied to the foregoing species, and one of the most noted of the New England shrubs which are wanting in beauty of flowers and foliage, is the Sweet Fern, (*Comptonia asplenifolia*), at the very name of which one is immediately inspired with delightful remembrances of spring and its former delights. The sweet fern is abundant in all the New England pastures, the intimate companion of the bayberry, the whortleberry, and the andromeda. It is bound into all the nosegays that are gathered on May day, and it forms the bays with which young children crown the temples of their May queen, before the eglantine has put forth its leaves, and when the only flowers of the meadow or the hillside are a few humble violets and anemonies.

As this plant sends up no suckers from its roots each shrub is a perfect miniature tree, beautifully ramified, and with a neatly rounded head. The leaves are very pleasantly aromatic, and are shaped unlike those of any other phenogamus plant, having nearly the shape of the true fern leaf, caused by alternate indentations almost to the midrib.

The sweet fern is common in New England, New Brunswick and Canada, and is found among the mountains in the Southern States. This shrub could not be successfully employed for dressed grounds; but it is a beautiful ornament of the pastures and rocky hills, and is admired by all who have been accustomed to rambling the fields in quest of flowers and other productions of nature.

THE ANDROMEDAS.

The Andromedas are a branch of the Heath family, of which we have no true specimen on the Western continent. They are all shrubs, the different species varying in height from about one foot to seven or eight feet. They greatly resemble the *Vacciniums* in general appearance, and in the blossoms and foliage; but the fruit is a dry capsule, not a berry. Some of the foreign species of this group, however, are said to produce edible berries. This, in fact, may be said of almost every genus of shrubs; some one or two species of the whole number bears a fruit for the sustenance of some living creature. Botanists have lately subdivided the genus *Andromeda* into three separate genera; but in the present description, which is not strictly botanical, it is more convenient to describe them, as in the old books, under the general head of *Andromeda*.

One of the most common species, possessing considerable elegance of growth, and noted for the beauty of its flowers, is the Dwarf *Andromeda*, (*A. calyculata*.) This is a very humble and early flowering shrub, remarkable for the peculiar leaning of the blossoms towards one side, as if they had been brushed by the hand, and had not recovered their natural position. The same appearance is observed in a little half shrubby plant, called the Cow Wheat, (*Melampyrum americanum*.) Each flower of the dwarf *andromeda* proceeds from the axil of a leaf, the whole forming a raceme at the ends of the nodding branches. The corolla is like that of an elongated blueberry blossom, commonly white, but sometimes a little empurpled. These plants are found on the edges of wet meadows, commonly growing on knolls and tufts, rather than from the level of the bog. They are more interesting to the botanist than to the cultivator, and they could be made of no service in dressed grounds.

There is still another more delicate species found in similar situations, bearing its flowers in drooping corymbs instead of linear racemes. The corolla is of a reddish hue before it is expanded, and though generally of a pearl white, when fully blown, it is often faintly tinged with red. This is the *A. polifolia*.

The paniced Andromeda, named *Lyonia* by Nuttall, is a tall and very common shrub in the New England pastures, distinguished from the blueberry bushes by its larger compound panicles of densely crowded white flowers, of a nearly globular shape. These flowers are very showy in their season. They are succeeded by a dry capsular fruit, bearing a superficial resemblance to white pepper. The fishermen on our coast have always employed these bushes, on account of their firmness and durability, as coverings to the flakes upon which the codfish are spread to dry. This and the clustered Andromeda were formerly distinguished by them by the names of *the white and the black pepper bush*, one having berries of a much lighter color than those of the other species.

The *A. racemosa* is rare, and is recognized by the regular arrangement of the flowers in its racemes, giving them the appearance of rows of teeth. This species is likewise found in low grounds, while the former is more frequent in high lands. It is the most ornamental of all the Andromedas, and the only species possessing qualities which would render it desirable and serviceable as a cultivated shrub.

FLORICULTURAL NOTICES.

NEW PLANTS OF 1857.—Although we have given a full account of most of the plants which have been introduced into England the last year, and figured in the various periodicals, the following condensed summary, which embraces a list of the most popular, may be read with interest. It is from Turner's *Florist*:—

The year which has passed away has been, as usual, prolific of novelties amongst plants cultivated as ornamental objects. It was, however, specially recorded, that two classes of plants which appeal to the senses more by their beautiful forms than by their gaudy colors—by their elegant rather than their gorgeous beauty—have made great advances in popular estimation. The classes referred to are the Ferns and the Orna-

mental-foliaged plants, including among the latter those with variegated leaves. We pass over these, however, to record briefly the novelties among flowering plants, which have attracted especial notice during 1857, either in consequence of their having been produced at the various leading exhibitions, or their having been published in the periodicals devoted to their illustration.

Among annuals, the most striking and useful addition which we have observed is *Lupinus Menziesi*, remarkable for its crowded, heavy spikes of deep yellow flowers. The *Veronica syriaca*, too, though of a simpler character, should form pretty dwarf blue beds. A purple-leaved variety of *Oxalis stricta*, called *atropurpurea*, may be a useful dwarf plant for special purposes. Here we may also record the showy biennial *Campanula Bromeheadiana*, a remarkably fine double Canterbury Bell.

Perennials are more numerous. There is the *Farfugium grande*, already figured and described in our pages. *Delphinium formosum*, an English garden variety, is, perhaps, one of the richest and showiest perennials, producing freely its large intense azure flowers; producing them freely, too, the first year from the seed, if sown early and planted in congenial soil. In the French gardens has appeared a handsome double flowered (so called) variety of *Scabiosa atropurpurea*; and there also has reappeared a beautiful dwarf *Dianthus*, with its crest of crimson white-eyed flowers, resting on a compact mass of deep green leaves; it is called *Dianthus pulcherri-mus*. *Lobelia texensis* is a vigorous growing species, with scarlet flowers, numerous, but rather small, and is of half-hardy character. This latter remark applies also to the fine Spanish *Salvia candelabra*, a tall suffruticose plant, with branching panicles of white and purple flowers. The French gardens have received from California, *Tanacetum elegans*, with greyish Fern-like foliage. *Viola pedunculata* is a handsome dwarf plant, with yellow flowers, spotted behind.

Among greenhouse plants, the finest, without doubt, is *Rhododendron Veitchii*, a dwarf habited species, with large white frilled flowers. Of the Indian species of *Rhododendron*, bloomed this year, *R. campylocarpum* proves a very handsome

delicate pale yellow ; *R. Thomsoni*, crimson ; *R. calophyllum* and *R. Jenkinsoni*, both blush white, the latter in rather loose, the former in very compact heads. Several good additions have been made to the Indian Azaleas, though, perhaps, none strikingly superior to those already known. The variety *Rosy Circle*, however, not now quite new, has been produced three times in bloom, at different periods, showing it to be a kind of perpetual flowering variety. The double variety of *Camellia reticulata*, introduced by Mr. Fortune, has bloomed, and proves to have a large, rich colored flower, moderately filled with petals. *Monochætum ensiferum* is a charming little Melastomaceous shrub, with Chironia-colored flowers, a greenhouse plant, certainly, but probably requiring a warm greenhouse. Some very pretty hybrid *Bouvardias* have been produced, of which the best has been already figured in our pages. One of the best of variegated plants is the new *Hydrangea japonica aureo-variegata*.

Achimenes amabilis is a fine stove plant, with white Fox-glove-shaped flowers ; and both that and *A. Meteor*, which we have figured, and *A. splendens*, alias *Tapina*, a trailer, with brilliant scarlet flowers, are charming additions to this popular family. There are some very handsome new *Begonias*. *B. Griffithi* and *B. Rex* are dwarf kinds, with a zone of silvery grey on the upper surface of their foliage ; *B. heracleifolia nigricans* and *B. laciniata*, larger sorts, with dark or brown purple variegations. The curious little *B. rosacea* has nearly circular flowers, and is altogether a neat plant. *Eucharis amazonica* and *E. grandiflora*, of which the first is, perhaps, only a larger flowered variety, are stove herbaceous plants of the first class, bold in character, free-blooming, and showy. *Gardenia citriodora*, a dwarf, cool stove evergreen, bears its fragrant white blossoms profusely. *Gesnera cinnabarina* is a fine novelty with the habit of *zebrina*, having richly colored foliage ; and *G. densiflora*, a free-blooming new species, with the habit of *oblongata*, both highly desirable additions to our gay stove plants. *Poitea viciæfolia* is a slender, elegant Mimosa-like plant, with vermilion-colored long Papilionaceous flowers. *Thunbergia Harrissi* and *T. laurifolia* are two noble stove climbers, producing pendant racemes of large pale blue

flowers, the effect of which, from the rafters of a hothouse, must be very fine. *Tydaea Eeckhauti* and *T. Ortegiesi* are showy hybrids, with the character of *Achimenes picta*, and of a rosy red.

395. *CODONOPSIS ROTUNDIFOLIA*; VAR. *GRANDIFLORA* *Hook.*
LARGE-LEAVED CODONOPSIS. (Campanulaceæ.) Himalaya.

A climbing annual? growing six feet high; with yellowish green flowers; appearing in summer; increased by seeds. *Bot. Mag.* 1857, pl. 5018.

A fine variety of the *Codonopsis*, with large flowers and larger leaves, raised at Kew, from Himalayan seeds, where it flowered in July last. It is a very beautiful addition to our climbing plants, having large and singularly colored flowers. It is supposed to be an annual. (*Bot. Mag.*, Nov.)

396. *LUPINUS MENZIESII* *Hook.* MR. MENZIES' LUPINE.
 (Leguminosæ.) California.

A half hardy perennial? with yellow flowers; appearing in summer; increased by seeds. *Bot. Mag.* 1857, pl. 5019.

A brilliant colored and showy Lupin from California, believed to be perennial. It has a large and dense spike of deep yellow, almost orange-colored, flowers. Should it prove hardy in our gardens it would be a valuable addition to any collection. (*Bot. Mag.*, Dec.)

397. *EICHORNIA TRICOLOR* *Seub.* THREE-COLORED EICHORNIA.
 (Pontederiaceæ.) South America.

An aquatic plant; growing one foot high; with purple, red and yellow flowers; appearing in summer; increased by division of the roots: grown in soft peaty soil. *Bot. Mag.* 1857, pl. 5020.

A very free flowering species, with foliage similar in shape to the *Calla*, and with spiked panicles of three-colored flowers. It is cultivated in a pot, plunged in a tank of water, and the leaves float upon the surface, blooming abundantly in the stove or warm greenhouse. (*Bot. Mag.*, Dec.)

398. *BEGONIA LASCINIATA* *Roxb.* CUT-LEAVED BEGONIA.
 (Begoniaceæ.) Eastern Bengal.

A stove plant; growing two feet high; with yellowish flowers; appearing in summer; increased by cuttings; grown in leaf mould, peat and sand. *Bot. Mag.* 1857, pl. 5021.

The more recently introduced Begonias are among the most beautiful of the ornamental-foliaged plants, their leaves being singularly and beautifully marked with various colors. "The

flowers are among the largest of the genus, and very striking from the bright red tomentum on the white ground of the sepals." The foliage is beautifully variegated, being of the deepest green, with a narrow margin of blackish purple, and a deep blotch in the centre of the same color. These markings and the very deeply cut foliage render it highly ornamental. The under side of the leaves is also beautifully marked with soft green and bright red. A superb addition to any collection. (*Bot Mag.*, Dec.)

399. ILLAI'REA CANARINOT'DES *Lenné*. CANARINA-LIKE ILLAIREA. (Loasææ.) Central America. •

A climbing annual; growing ten feet high; with yellow and orange colored flowers; appearing in summer; increased by cuttings and seeds. *Bot. Mag* 1837, pl. 5022.

A showy climber, allied to the Loasa, but with very much larger flowers, being drooping and tulip-shaped, of an orange red, with the margin of the petals yellow. Like the Loasas, the whole plant is clothed with hairs, which often sting the hands and render it a dangerous neighbor; but for this it would be a most desirable, as it is a showy, climber. (*Bot. Mag.*, Dec.)

400. RU'BUS NU'TANS *Wall*. SHAGGY-STEMMED RASPBERRY. (Rosacææ.) Himalaya.

A hardy trailing plant; growing two feet high; with white flowers; appearing in summer; increased by suckers; grown in any good garden soil. *Bot. Mag.* 1837, pl. 5023.

A very pretty decumbent species, "covering the ground like ivy with its glossy perennial leaves, bearing pure white flowers, among the largest of the genus, and these white flowers are well relieved by the blood-colored under side of the calyx." It is a native of Himalaya, at elevations of 8000 to 11,000 feet, and in England has proved quite hardy, flowering in peat soil in an open border. The habit is something like the common blackberry trailing over the ground. The wood is free from spines, but is covered, as well as the leaves, stems, calyx, &c., with a copious, soft, villous setæ, of a rich purple tint, mixed with white hairs. Coming from such a great elevation it will probably prove hardy, at least with a slight covering of leaves, which its procumbent habit will readily admit of. Its handsome foliage will make it a valuable plant for covering bare spaces in the shrubbery or garden. (*Bot. Mag.*, Dec.)

401. *CYPRIPE'DIUM FAIREA'NUM* Lindl. MR. FAIRE'S LADY'S
SLIPPER. (Orchidaceæ.) East India.

A stove orchid; growing one foot high; with green and purple flowers; appearing in autumn; increased by division of the plants; grown in coarse peaty soil. Bot. Mag. 1858, pl. 5024.

All the *Cypripediums* are beautiful plants, even our well known hardy species; but the East Indian kinds are far handsomer, and should have a place in every choice collection. The kind now under notice is similar in appearance to *C. insignis*, but the flowers are smaller. Dr. Hooker says, "the blossoms are certainly amongst the most exquisitely colored and pencilled of any in this fine genus." They are easily cultivated in a warm greenhouse or hothouse, and their singularly formed and delicately marked flowers of unique colors are highly ornamental. (*Bot. Mag.*, Dec.)

402. *SONERILLA SPECT'OSA* Zenker. SHOWY SONERILLA.
(Melastomaceæ.) Neilgherries.

A stove plant; growing a foot high; with rose flowers; appearing in spring; increased by cuttings; grown in leaf mould, peat and sand. Bot. Mag. 1858, pl. 5025.

A "most lovely species," from the collection of Messrs. Veitch, who introduced it with the *S. elegans*. It has cordate ovate leaves, nine nerved glabrous leaves, and erect stems, terminated with a cyme of a dozen or more large dull rose-colored flowers. The neatness of its habit and the richness of its blossoms render it a fine plant for the warm greenhouse. (*Bot. Mag.*, Jan.)

403. *COSMA'NTHUS GRANDIFLO'RUS* Benth. LARGE-FLOWERED
COSMANTHUS. (Hydrophyllaceæ.) California.

A hardy herbaceous plant; growing two feet high; with pale blue flowers; appearing in spring; increased by division of the roots, and seeds. Bot. Mag. 1858, pl. 5026.

A pretty California plant, first seen by Douglas in 1834, and afterwards by Nuttall, but only lately introduced by Messrs. Veitch, who received it from their collector Mr. Lobb, who gathered it on the mountains of San Bernardino. It is similar to the *Eutoca*, but the flowers are twice as large, and much paler in color. In England it has proved a hardy plant, but from the locality where it was found it is doubtful whether it would not require the protection of the frame in our climate. Dr. Hooker says, that if the flowers possessed the rich blue color of *Eutoca viscida*, it would indeed be a splendid ornament to our flower borders. (*Bot. Mag.*, Jan.)

404. *GRAMMATOCA'RPUS VOLUBI'LIS Presl.* TWINING GRAMMATOCARPUS. (Loasææ.)

A twining plant; growing six feet high; with yellow flowers; appearing in summer; increased by seeds or cuttings. *Bot. Mag.* 1856, pl. 5428.

A pretty climbing plant, with slender herbaceous stems and small pinnatifid leaves, producing beautiful yellow flowers. It is allied to the Loasa, and the stems are covered with minute stinging hairs, as in that plant. Aside from this peculiarity, it is a showy and fine summer climber. (*Bot. Mag.*, Jan.)

405. *ESCHYNA'NTHUS TRI'COLOR Hook.* THREE-COLORED ESCHYNANTHUS. (Cyrtandacææ.) Borneo.

A stove plant; growing one foot high; with yellow, red and crimson flowers; appearing in summer; increased by cuttings; grown in coarse peaty soil. *Bot. Mag.* 1856, pl. 5431.

One of the most beautiful of this pretty tribe of plants, which are admirably adapted for cultivation in ornamental baskets suspended from the roof of the house. The branches droop considerably, and the flower stalks, though pendant, have an upward curvature which adds to the gracefulness of the plant; the flowers are deep scarlet, streaked with yellow and black. (*Bot. Mag.*, Feb.)

406. *COLLE'TIA CRUCIA'TA Hook.* CROSS-SPINED COLLETTIA. (Rhamnææ.) South America.

A greenhouse plant; growing three feet high; with white flowers; appearing in spring; increased by cuttings. *Bot. Mag.* 1856, pl. 5033.

A singular plant, whose stem and branches are constituted of a mass of opposite, decussated and decurrent, large, lateral, compressed spines, of the same dull green color as the central portion that unites them. The flowers appear at the base of the spines, and are composed of little white waxy bells, which, strung along the green, leafless stems, have a beautiful effect. In the south of England it is hardy, but with us would require greenhouse cultivation. (*Bot. Mag.*, Feb.)

407. *GAULTHERIA DI'SCOLOR Nutt.* TWO-COLORED GAULTHERIA. (Ericææ.) Bhotan.

A greenhouse shrub; growing two feet high; with white and rosy flowers; appearing in spring; increased by cuttings; grown in sandy peat and leaf mould. *Bot. Mag.* 1856, pl. 5034.

A very elegant species, discovered in Bhotan by Mr. Booth, and sent to Mr. Nuttall, at Rainhill, in whose collection it

flowered. The leaves are about an inch long, ovate lanceolate, green above and silvery beneath, with parallel nerves. The flowers are small, white, with pink lobes, and appear in dense clusters at the axils of the leaves. (*Bot. Mag.*, Feb.)

408. *DASYLIRIUM ACROTRICHUM* Zuccar. BEARDED-LEAVED
DASYLIRIUM. (Asparagineæ.) Mexico.

A greenhouse plant; growing fifteen feet high; with greenish flowers; appearing in summer; increased by seeds; grown in light rich soil. *Bot. Mag.* 1856, pl. 5030.

For decorating conservatories in winter and lawns in summer, the Yucca-like looking plants have become very popular. They certainly give a picturesque character to a collection, and break up the regularity so prevalent in the arrangement of conservatories. The present species is one of this class; having a graceful tuft of slender coriaceous leaves, three to four feet long, and producing a spike of flowers which at Kew attained the height of fifteen feet, clothed half the distance with erect bracteated spikelets of a greenish color, streaked with red. For summer decoration this and the allied species are all valuable plants. (*Bot. Mag.*, Feb.)

DATURA METALOIDES.

BY THE EDITOR.

It is unfortunate that all our American plants should have to be transferred to Europe, and to the charge of European botanists, before they can find a name. At an earlier date, when there were fewer American botanists, and when English and French collectors were sent out to explore the country in search of new plants, it was to be expected that the collectors, who were scientific men, would give all the plants they discovered an appropriate name; but at this late day, that we should still be compelled to submit to this practice is a stain upon the progress of botanical science in America. In fact, we have few or no live botanists; they all deal with herbariums, and, with few exceptions, do not appear to know the very plants in a live state which they have described from their dessicated forms. And the few descriptions which are

made are read before some society, whose proceedings are not made public until long after the plants have been sent to Europe, where their published descriptions in the horticultural and botanical periodicals of the day give them priority over all manuscript names. It is to be regretted that this is the fact, but so it is.



15. DATURA METELOIDES.

The plant now under notice was one of this description. It was found in Texas, and sent to Dr. Gray of the Botanic Garden at Cambridge, where it was raised from seeds and disseminated under the name of *Datura Wightii*. But no account of it has ever been given to the public, and except that amateurs and lovers of beautiful plants have seen it in

our gardens, it would have remained as little known as if it had never been sent from its native locality in Texas.

It is a remarkably beautiful plant, and of such easy cultivation that it will be found in every garden. All the *Daturas* are showy, especially *fastuosa* and *ceratocaulon*, but the *metaloïdes*, the kind now under notice, (FIG. 15), excels them all.

From the *Revue Horticole*, in which journal we find a full account of it, we learn that the seeds were sent to M. Vilmorin, of Paris, by Dr. Asa Gray of Cambridge. The plant is originally from Texas, where it grows to the height of three to four feet. The stem is much branched, and the leaves are oval-elongate, a little angular, pubescent; the calyx is a little longer than the corolla. The flowers are large, white, with a faint tinge of bluish lilac on the border.

Its cultivation, as we have said, is very easy. It may be raised from seeds like any of our tender annuals, and planted out in the open border as soon as all danger of frost is over. It soon commences to bloom, and continues in flower until destroyed by early frosts, its branches being covered with its large trumpet-shaped corols, which exhale a delightful odor. But the plant is perennial and forms a woody root, which may be taken up and preserved through the winter, like the dahlia. Planted out again in June, it blooms earlier and more abundantly than the previous year, and forms one of the showiest ornaments of the garden.

General Notices.

STRAWBERRY CULTURE IN ENGLAND.—With regard to strawberries, I will observe that they require, as to soil, manure, and plenty of water in hot weather, the same treatment as roses. My chief reason for writing this, is to recommend some of the best strawberries out of the number advertised, some of which are puffed off under sounding titles at high prices, but which are, many of them, not so good as those which may be bought at four shillings per hundred. I do nothing in forcing. My brother gardener, who forces numerous and variously, speaks highest of Keens' Seedling, Trollope's Victoria, and the Black Prince. The finest flavor (laugh who

will) is, in my opinion, that of the old Hautbois. It is now (the 27th of October) in bloom, and has a berry about an inch long, a sample of which I send you. I should think it would force early or late. The strawberries which I send you are from runners planted in June this year, and they are grown out of doors.

The next best strawberry, in my opinion, is the Rival Queen, raised by a clergyman. I tasted this at Mr. Tiley's, of Bath, together with British Queen. It is much like the latter in taste and appearance, both as to berries and leaves, but it is sweeter, and is said to be, and appeared to me to be, hardier and more free-growing. I bought fifty plants at ten shillings, and have planted them by the side of the British Queen, with which, as yet, I have been able to do nothing; eighty out of one hundred died last winter. It is, however, impossible to deny that the British Queen is first-rate in flavor. It will not stand wet; I have therefore planted some on a raised platform, (like an asparagus bed), and some on the flat; the former being light ground impregnated with ashes and manure, and the latter stronger ground highly manured. Mr. Ingram, surgeon, of Blandford, a noble strawberry grower, says it likes strong ground, and new plants every year. Indeed, he pursues an annual cultivation with his numerous sorts. With such good soil, with such easy access to manure, and with a hot, walled garden, I think it is a good plan—not for “quantity,” but “quality.” He truly observed to me, that the British Queen, to be anything, must be ripe to the very “nick.”

The strawberry which I admire most for shape, size, beauty, and sweetness is Trollope's Victoria. Mr. May, banker, of Blandford—a most successful strawberry-grower—agrees with me as to the noble qualities of this excellent and hardy strawberry. It requires no sugar, and bears better as age increases—at least, I can speak for three years. It is very hardy and likes room, but it is not so prolific as the next two which I will speak of, viz., Sir Harry and Keens' Seedling. These are both excellent, hardy, prolific, and, emphatically, family strawberries.

Sir Harry is a “miracle” in itself. I planted two feet apart each way, in the spring of 1856, twenty-five plants; did not crop them “that” year, but kept them for this; I think many of these plants had from 200 to 300 berries. I sent one plant in a bushel pan to the Wimborne show, where its innumerable family excited wonder and admiration. I could not, however, drive any of the berries of these twenty-five plants to the size and quality of those derived from their runners in the fall of 1856. If you can get July runners, Sir Harry will show, as a plantling, a larger crop the first year than any other I know of, and it will bring its noble fruit to perfection in detail. It is of excellent flavor and an early ripener. I gathered a fine dish out of doors the 17th of June, this year, from the runners of 1856. It should be almost purple before gathered.

Keens' Seedling, I need hardly say, is a strawberry that must not be given up for new comers. It is hardy, and with me defies the severest frosts and snow. It is prolific to a miracle, like the last; and with runners kept off, and treated as stated hereafter, it will stand good for at least four

crops. It is a good strawberry for preserving, as it ripens its crop well and at once. It has one fault—it is a bad traveller. I have been honored with visits from some of the gardeners of the great people in the neighborhood, to see, and admire, and wonder at the crops of the two last strawberries; and truly they did stare. Sir Harry, like Keens' Seedling, will long hold its own.

The Old Carolina (getting scarce) is a great favorite of mine, and in beds (not singly) is a wonderful bearer, and much like, in appearance and flavor, the British Queen; but it is sharper. The best way to grow it is to plant a foot each way, and strike out every year the alternate ranks; and then, having manured and "trod" the ground, peg down runners from the remaining ranks in the line vacated.

When I was at Bath, I tasted Col. Dundas, and wondered why it should be £1 per hundred, while the British Queen, Keens' Seedling, Victoria, and Alice Maude were four shillings.

I tasted, at the White Hart, Kitley's Goliath; I thought it good and handsome, but it required sugar. I saw also some of the plants; they were much injured by red spider. In a large garden near here, I saw they were similarly affected. Mr. Haydon, gardener at Langton, has sent me some of Kitley's Goliath, and also some plants of Alice Maude, which he thinks finer in flavor than Keens' Seedling. It is, he says, a good bearer, and hardy. I have given him Sir Harry in return, and I think he will be no loser. Of these two latter I will, at present, say nothing, as I "will" have experience before I recommend a rose or a strawberry to the public.

I will now end with a few hints to the young "Fragrarian."

Avoid double-bearing strawberries, as they come in when there is no sun, and go out when there is none. The Black Prince I know is early, and the White Alpine will bear valuable strawberries in September. I think the old Hautbois may be made to do both. In proof of the latter, I have sent you some specimens, and I say—"Circumspice!"

If you are troubled by birds, wide distances are dangerous, unless you protect. Kill slugs in winter with lime or ducks. Do not water while the plant is in flower, but, from the time the berry is formed till it reddens, you cannot pour on too much. Put clean wheat straw between the ranks, and water every third day, in sultry weather, copiously. Begin manuring directly after the crop is off and the runners taken. Preservation of life is better than the chance of a resurrection. Potash is the manure; so says my friend Mr. Huxtable. All I know is, he never grows any strawberries; but his farming is most excellent. I use guano (sparingly), soot, coal ashes, field ashes, wood ashes, liquid manure, cow and horse droppings. I believe stale night soil to be the best. New maiden earth is also good for a dressing.

After the crop is off, I cut off all the leaves and dress handsomely, stirring the soil about two inches deep between the ranks, and one inch near the plants. This brings a luxuriant crop of leaves, which protect the crown in winter and throw off the wet. This will not do, mind, unless you do it early, and are a "high manurer."

Now, if you will attend to these rules, you will get good and fine strawberries, which is what gentlemen with four-acre gardens with one pump, heaps of pine-apples and melons, do not get. Remember, then, the words, "Manure," "Pump." I will only add, my plants, of three ages, look green and luxuriant as Rape. I never had my runners so strong. My five years' old Keens' show signs of decay —(*Turner's Florist for Jan. 1858.*)

WINDOW GARDENING.—Some local horticultural societies offer prizes to cottagers and others for window plants, and we have been asked by one of our correspondents to supply some information which may be useful on the subject. It is a difficult topic to write upon, not because of deficiency of materials, but, on the contrary, from their abundance. That plants may be grown in windows with healthy foliage and fine flowers we all know. Some years back we ourselves were without a greenhouse, yet by means of a cold pit in winter and some large windows of a country dwelling, we managed to have a good show of various kinds of exotics all the year round. But then skill was employed, with constant attention and plenty of house room. We often see a handsome blooming plant in a poor cottage window, in a room always occupied by the family. But this is rather a matter of chance than of sagacity, for in twenty other cottages wretched dwindling things may be seen. The successful plant has probably found a congenial habitat as to soil and climate, and being put out-of-doors in mild rains, it manages to survive the dust and close temperature of the cottage.

Plants may be grown well in the windows of dwelling houses, whether cottages or mansions, but it must not be concealed that the art is a nice and difficult one. If there is a spare room, such as a "little parlor," which has only an occasional occupation when visitors come, a dozen plants will flourish there, other conditions being attended to. But plants require, in such circumstances, more than ordinary attention, and none should attempt their culture unless prepared to give it. A child is difficult to rear in health and strength, just in proportion as external circumstances are unfavorable; yet those obstacles may be overcome by judicious management. So is it with plants. With fresh air and sunlight, and good soil to grow in, they may be more left to themselves than when put into the window of a sitting-room, whose atmosphere is always dusty, subjected to great changes of temperature, and blest with no great abundance of light.

A long list of plants which have done well in windows might be given, but it would be of little service, since places and treatment which would do for one kind would not suit another. We will mention a few which will accommodate themselves to almost any required. Foremost stand the *Pelargoniums* and *Geraniums*, favorites everywhere, and always repaying a little attention with handsome foliage and bloom. Windows do well for these; and we have just had occasion to observe that while a large collection of *Pelargoniums*, kept in a coldish greenhouse all winter, have suffered much by the spot on their leaves, two which were kept in a study window are quite free from that pest. This is owing to two things;—a higher temperature, and freedom from damp, especially the drip of the frames, which

is very injurious to the foliage in cold weather. A dozen *Pelargoniums*, trained so as to bloom in succession, would make a nice little charge for a cottager. But we think we should prefer a dozen of the Scarlet and variegated *Geraniums* if we must be confined to that number. Some of the variegated kinds now have fine trusses of flowers; they all grow quickly; and they never seem to be liked by that enemy of household plants, the green-fly.

Calceolarias do well in windows, and some of the sorts remain a long time in bloom. We have just passed through a town in the old-fashioned windows of which we have seen good specimens of this flower, well grown, healthy, free from insects, and covered with bloom. The same remark may be made of *Cinerarias*. China Roses submit to this treatment patiently. Myrtles may be found in good case all over the country, which have never seen better accommodation than is given in a "parlor." As to Cactuses, they seem to delight in a dusty room, and provided they have their season of rest, and are not spoiled by being watered all the year round, they may be made to bloom profusely. These are only a few things; but we would recommend any one who intends to cultivate plants in windows to pay a visit of observation to his neighbors, and to see what kinds do well with them. This will be far better than any practice on new sorts, which may require a treatment not within the cottager's power.

As to soil, &c., a man ought to know enough of general gardening to understand these matters before he begins to grow plants in windows. A novice must expect to buy his experience; but a little disappointment, if patiently borne, will lead to ultimate success. Watering is the best touchstone of skill in this department, the general tendency being to excess of moisture. A thorough watering being given, the plant should be allowed to get as dry as possible without flagging before the operation is repeated. Keeping the leaves free from dust is another indispensable condition of success, and this can be done by sponging them with tepid water, or putting the pots out of doors in gentle rains. We would encourage cottagers to attend to this department of gardening, but they should also know the conditions of success, and not led to be too sanguine at first.—(*Gard. Chron.*, 1858, p. 437.)

THE DIOSCOREA.—With the month of April comes the time for planting the Chinese Yam, or *Dioscorea batatas*, as botanists call it; and we hope that gardeners will really set to work to grow it rationally. Up to the present time, it has been only here and there that common sense has been applied to this crop. One plants in hard clay; another in loose, sandy soil over an iron "pan;" a third selects a cold, damp, clayey border, which the sun never sees till the afternoon, and not often then. Such mismanagement can offer no evidence as to whether the Chinese Yam is worth growing or not. It is to be hoped, however, that the good example which has been set in some intelligent quarters will at last produce the usual effect.

That this esculent is of excellent quality when properly boiled, is now admitted; that a fair crop of it may be obtained has been here and there

sufficiently proved. So great indeed has been the success that Mr. Cutbush of Highgate is, we believe, about to offer a prize for the best ten roots produced at the Horticultural Society's Grand Autumn meeting, next November, in St. James's Hall. That competitors will present themselves in abundance we cannot doubt, especially since good sets can now be had without much difficulty. A few words of advice may therefore be acceptable.

The Chinese Yam is one of those plants which, like the potato, produce two sorts of branches; one sort rises into the air and is clothed with leaves; the other burrows under ground, has no leaves, and forms a tuber, vulgarly called a root. Unlike the potato, the Chinese Yam directs its tubers perpendicularly downwards, to the depth of one and a half or even two feet, and with such force that the point (lower end) of the tuber forces small stones and such hard bodies into its own flesh. It is therefore absolutely necessary that the soil shall be penetrable to the depth of two feet.

The Chinese Yam, although perfectly hardy, requires a higher summer ground temperature than we are accustomed to in England. Artificial means must therefore be employed to raise the heat of the ground above its ordinary amount. When ground is level, the only practicable way of doing this is to throw up ridges running east and west, and to plant the sets at the top of the ridge. If these ridges are twelve inches above the level, as they ought to be, the soil below need not be more than twelve inches deep. It is worth trial, where the means exist, whether an inch or two of fine charcoal, or soot, or cinder ashes, on the south slope of the ridges would not raise the earth heat beneficially. Where, however, a slope to the south can be had, we would suggest that the ridges had better run north and south, so as to receive on each slope the full influence of the noontide sun. These precautions taken, nature must do the rest. If the sets are planted in the middle of April, the tubers will be ready to dig in the beginning of November.

Such are, we believe, the main precautions which gardeners should take. We mention them because they are practicable in any cottage garden, costing nothing and promising much. Where artificial heat can be communicated to the earth, as by filling the hollows between the ridges with warm stable litter, greater success would probably be attained.

In a recent number of the Journal of the Horticultural Society of Paris we find some details upon this subject from the pen of M. Pissot, who is the secretary of a committee formed to examine the evidence obtainable respecting the cultivation of the Chinese Yam in France. From his official report the following additional statement is gleaned.

The *Dioscorea* is generally considered productive, succulent, and useful as food. The only obstacle to its cultivation is the difficulty of digging it up. (It will not draw like a parsnep, because the biggest end is lowermost.) It cannot be absolutely asserted that it does equally well in all soils. What it likes best is a deep light sandy soil in good heart. It has failed in cold clays. Thus the little knobs formed among the leaves have the same year produced roots as big as *Scorzonera* in the first kind of soil, while in the

second whole tubers have yielded tubers smaller than themselves. It likes hot aspects, its stems which spread over the soil keeping it from becoming dry. The smallest bits of the tubers used as sets will grow and give increase; and cuttings of the stem are readily struck. But the best sets are from the *narrow end*; so that the big end had better be reserved for the kitchen. The better the set the better the tubers that come from it. The tubers may be left in the ground all the winter, if the soil is covered with a layer of leaves. (Is this really necessary?)

M. Payen, adverting to the difficulty of digging up the tubers, states that the Chinese only take them up as they want them, beginning at one end of a ridge, casting the earth backwards, and working on to the opposite end.

Let us add, that the French have obtained females, whose seeds have ripened and produced young plants. We believe that all the plants in this country are males.—(*Gard. Chron.*, 1858, p. 263.)

Roses.—While the rose is so great a favorite that no gardener is willing to be without it, in several varieties, it is yet a plague from the fact that it is peculiarly subject to the attacks of insects. At the present time a large part of our own collection is being preyed upon by the caterpillar which displays such singular ingenuity in rolling itself up in the leaves, while another portion has every young shoot smothered with green-fly. The present warm weather has done this in quick time too; for it is not long since we effected the cleaning of our trees by hand-picking and syringing. Well! like Sisyphus, we must begin our labors again, and so persevere till the end of the chapter, for to suffer such depredators to establish a right to our domain by an undisturbed tenantry, is out of the question.

Handpicking is the best method of treating caterpillars, of whatsoever kinds. The process seems long in prospect, but in performance it is got through very expeditiously; the eggs should be looked for as well as the caterpillars; and the latter must not be regarded as only important when they are full grown; on the contrary, to kill a young one should be considered as good a feat as the destruction of two or three which have come to maturity. All gardeners ought to study the natural history of their enemies; and we mention this, not because we have done so, but because we are suffering from the consequences of our neglect. A knowledge of the habits of insects would enable us to tell what kinds of butterflies and moths produce the various caterpillars, where the eggs are deposited, and other important particulars. The possessors of the back volumes of the *Gardener's Chronicle* will find most of the insect tribes injurious to the garden noticed and described, and a valuable index to such items was furnished a short time ago. On turning to that index we find the following enemies of the rose enumerated:—Rose sawfly, four kinds, affecting leaf and stem; Green Rose chafer; Rose leaf miner; Rose snag maggot. We advise our readers to make themselves acquainted with all these before another year, but in the mean time let them keep up a diligent onslaught on the enemies by hand picking.

As to green-fly, fumigating with tobacco is the best remedy ; and if a covering which is pretty close in its texture is provided to enclose the whole head of a tree, the fumigating bellows will do wonders in this department. But this is a troublesome and rather expensive process, and good syringing will generally keep down the pest. We mix up a strong lather of soft soap and water and apply it when the sun is off the trees. We then wash with clean water about half an hour after the first operation. We may mention here that ants seem to be great enemies of the aphids, and on this account we have let them have a little encouragement in our garden, taken care to watch their movements, and not let them get too strong and intractable.

Those who have a greenhouse should now be preparing roses in pots for autumn and winter blooming. We will just tell them what is our own practice this spring, and as we have found it a good one on other occasions, we can recommend it. We bought a dozen roses in pots of the kinds best adapted for indoor culture. These we looked over, and brought into a compact form by pruning. When they began to grow rapidly we put them into 24-pots, in soil composed of turf from an old pasture chopped up in pieces about 3 4 inch square, and about one-half thoroughly rotten dung. When the plants were potted in this way, we buried them up to the rims in a warm and exposed border, and our future treatment will be to pick out all flower-buds as they appear, and to shorten the shoots if they grow too long or weakly. In this way by October the trees will have a fine stock of well ripened wood, and on being introduced to the greenhouse and allowed to form their buds, they may be expected to repay us for our trouble. We shall give manure water two months hence, but at present the food in the pots is as strong as is good for the trees.

Those who are anxious to have new roses should go now and look for themselves. In some nurseries purchasers would be allowed to mark the trees they would prefer, so that they could have them in the proper season. But at all events it is far better to select the sorts from personal observation than to go by the information of catalogues. All new roses are not so different from the old favorites as to be desirable acquisitions, and it is vexing to give 5s. or 10s. for a tree and find it to be very like one already possessed. Choose when in bloom and this will be avoided.—(*Gard. Chron.*, 1858, p. 457.)

GREEN FROGS.—Can you give me any information respecting these? I found one in an old frame in which I had some bulbs that had been forced. It was sitting on the leaves of the tulips, and, as I never saw one before, I caught it and placed it in the hothouse under a glass tumbler for two or three days, and then I set it at liberty in the house and saw no more of it for a week or ten days. One day, however, to my surprise, I saw my frog sitting on the vine over head, and ever since that time, which is about a fortnight, it has been on the vines ; it hops about like a bird, and is as green as the vine leaves themselves. Will it injure the grapes?

Answer.—This interesting little reptile is common in Germany, France,

&c., where he inhabits trees; but he is not wild in this country. His food consists of insects. He will live in a damp vinery, but not in a hot, dry place. You may sometimes see him confined in a large glass jar, having damp moss at the bottom, and a little ladder upon which he can stand or climb. Flies are his favorite food. His name is *Hyla arborea*. He will not hurt your vines or anything else, for he is one of the most harmless of creatures.—(*Gard. Chron.*, 1858, p. 438.)

Gossip of the Month.

THE ONION FLY AND GARDEN SEEDS.—MR. HOVEY: In many parts of the country the onion crop has failed for several years. Possibly the cause is generally known; if not, it may be of use to publish this, which is at your service.

As soon as the second blade of the plant appears, a small winged insect, almost imperceptible to the sight, deposits an egg at the point of separation of the two blades, which produces a maggot; this maggot enters the principal blade, eats a pathway downwards in it, buries itself in the earth, ascends in the spring, and is changed, as other grubs are, into a winged insect, like its parent. If examination is made when the blades begin to droop, the maggot may be discovered. I could never see the winged insect distinctly; but on moving the hand swiftly over the row, something was seen in the atmosphere above the blades.

What preventive can be used? I have shaken lime dust, guano, and phosphate of lime on the plant, soon after it had come up; but neither has done any good. I have not tried potash water, which destroys the egg or maggot of the apple tree borer; but it might destroy the plant.

Presuming that the fly does not migrate far, I sowed the seed this year at a short distance from the spot where they were sown last year, and for several years before; but the insect has come, and is now doing its fatal work. I sowed another bed at a much greater distance, in the midst of potatoes, and to them no damage has yet been done.

Onions being the topic in mind, permit me to say that this year I bought a paper of the seed of the White Portugal, and planted them, and only one produced a plant. I bought another paper, planted them, and not one has come up.

From onions I pass to parsnips. Generally, I have failed in raising a full crop of this esculent. Last year, I permitted a plant, which had remained in the ground through the winter, and vegetated luxuriantly, to go to seed, and planted the seed this spring. I should not be far wrong in saying that every seed has produced a plant.

The itinerant seed sellers are a pest. Far better would it be were every farmer obliged to raise his own seed, or to purchase from some honest neighbor. My former communication on this subject has done no good in

this region. I hope every country storekeeper will refuse to receive garden seeds for sale, and every man refuse to buy any, if the year when it was raised is not printed on each paper.

Several years ago, I cut from a newspaper the paragraphs which follow, and pasted them on the fly leaf of my book on gardening. I have seen the same list, or a similar one, in a Patent Office Report:—

“The vitality of seeds, under favorable circumstances, may be depended on for the following periods:—Parsnips, rhubarb, and other thin, scaly seeds, one year. Balm, beans, carrots, cress, lavender, leek, onions, peas, pepper, salsify, savory, thyme, tomato, wormwood, and small herbs, generally, for two years. Artichoke, asparagus, corn salad, egg plant, Indian corn, lettuce, marjoram, mustard, parsley, rosemary, spinach, and tansy, three years. Borage, broccoli, Brussels sprouts, cabbage, cauliflower, radish, and turnips, four years.”

As you say you test all your seeds before offering them for sale, I shall be your customer hereafter.

Understanding that you desire that your contributors should sign their names, I comply, and am, very truly, yours.—S. HALE, *Keene, N. H., June 15, 1858.*

[The maggot which is so destructive to the onion crop is the larva of the onion fly, *Anthomyia ceparum*, an insect so little known that Dr. Harris, in his first Treatise, merely mentioned it on the authority of Mr. Westwood, who had fully described it in Loudon's Magazine, Vol. XIII.

It is a troublesome insect and difficult to destroy. Various remedies have been tried, and said to have proved effectual. One was, watering the young vines with urine. Mr. Westwood thinks the only way to prevent its ravages is to plant in a heavy soil, which the perfect insect cannot penetrate when it emerges from the chrysalis state. We should suggest a large dose of guano in the autumn, upon land intended to be sown in the spring. We shall be glad to hear of an effectual remedy, if any of our experienced cultivators know of one.—ED.]

THE REBECCA GRAPE is undoubtedly hardy here. Of a great many I know of, set last winter, I know of but two dead ones—one was turned out of a pot late in the fall; another was, I believe, a green summer cutting. Don't depend on half you read in the papers. There has been some “fuss” here about “true and false kinds.” I have taken some pains to examine over 200 plants, some from Dr. Grant, some from Mr. Brooksbank, some from Boston, and other sources, and am well satisfied all is right hereabouts. [So we supposed.—ED.] Yours, T. MEEHAN, *Philadelphia.*

Massachusetts Horticultural Society.

Saturday, May 23.—Exhibited. FLOWERS: From A. Bowditch & Son, J. Nugent, B. Bruce, and J. A. Kenrick. E. S. Rand, Jr. contributed

Lilium excelsum, and Rand's Annie Verbena. Mr. S. Sweetser sent a very fine Seedling Cactus, raised from Ackermanni and speciosissimus. From T. G. Whytal, a new Verbena, called Spark, a good flower, also Cineraria Fair Ellen.

May 29.—Exhibited. FLOWERS: From Jos. Breck & Son, and S. Walker, fine Tulips. From E. S. Rand, Jr., Trillium cernuum and pictum, and Phlox divaricata. J. A. Kenrick exhibited fine Magnolias. Flowers in variety, from F. Winship, A. Bowditch & Son, Miss Russell, Mrs. C. M. Baily, W. W. Wheildon, W. E. Carter, and others.

AWARD OF GRATUITIES.

To S. Walker for Tulips, J. Breck & Son for Tulips, and W. E. Carter, for display, \$2 each.

To B. Bruce, F. Winship, F. H. Rand, A. Bowditch & Son, and Miss Russell, \$1 each.

June 5.—Exhibited. FLOWERS: Fine displays were made by J. Breck & Son, E. S. Rand, Jr., J. A. Kenrick, A. Bowditch & Son, G. Evers, F. Winship, E. Wight, Barnes & Washburn, S. Sweetser, W. E. Carter, E. A. Story, and others.

Messrs. Breck & Son had a fine collection of Tulips, and received the first prize for the following flowers:—Gloria Mundi, Gloria Negresum, Trafalgar, La Belle Navarino, Gouden King, William First, Stratonise, Graaf Van Worth, L'Intransessant, La Cantique, La Sultan, Caranote, Bella Quive, Valernio, Cassina, Alexander le Grand, Reine de Perse, Sans Pareille, Madame Rachel, Reine d'Egypt, Grandeur Royal.

M. P. Wilder made a fine show of Tree Pæonies, in great variety. W. C. Strong sent a collection of Pelargoniums, among which were:—Mad. Lamoricieri, Ignescent superba, Diadematum erubescens, Carlotta Grisi, Prima Donna, Auguste Mieliez, Mochanna, Barbette, Virginia, Jacques Duval, Pilot, Lablache, Lady H. Campbell, Silver Queen; Bedding Geraniums, Pretty Poll and quercifolium; Cape Geraniums, Campnella elegans, ardens superbum, quinquevulnerum, semperflorens; two new Fuchsias, Souvenir de Chiswick and Etoile du Nord (very superior.)

PRIZES AWARDED.

TULIPS.—For the best 30 flowers, to J. Breck & Son, \$5.

SHRUBBY PÆONIES.—For the best 10 flowers, to M. P. Wilder, \$5.

For the next best, to J. Breck & Son, \$3.

June 12.—Exhibited. FLOWERS: From H. H. Hunnewell, by F. L. Harris, West Needham, a magnificent display of Rhododendrons, among which we notice, picta, punctatum, multimaculatum, Crimson Perfection, grandidissima, magnifica, Roseum elegans, Purpurea elegans, Dark Purple, coelestinum, speciosissimum; also, Ledum buxifolium and Thymifolium, Kalmia myrtifolia and Andromeda Mariana—a very fine display, far surpassing any of former years.

From J. A. Kenrick, Hawthorn, three varieties; Laburnum and Wistaria fine; Azaleas, Aristolochia siphon; Spireas, Weigela—a fine display. From

T. G. Whytal, one *Pelargonium*, *Madam Von de Weyer*, a very fine specimen, one of the best grown plants which have lately been exhibited; the form of the plant and profusion of bloom reflect great credit upon Mr. Ward, gardener to Mr. Whytal, by whose care and attention such a result has been attained. From E. S. Rand, Jr., *Clematis azurea grandiflora*, *Combretum purpureum*. Cut flowers, plants and baskets have also been exhibited by E. A. Story, J. Breck, Annie C. Kenrick, Barnes & Washburn, and Wm. C. Strong, but no list of them has been handed to the Chairman.

GRATUITIES.

To J. Breck, for display, \$1.

To Barnes & Washburn, for display, \$1.

To J. A. Kenrick, for display, \$1.

To E. A. Story, for display, \$1.

To Annie C. Kenrick, for basket, \$1.

To T. G. Whytal, for *Pelargonium*, \$2.

June 19th.—Exhibited. FLOWERS: From T. G. Whytal, *Fuchsias*—*Star*, *Emperor*, *Napoleon*, *Charlemagne*, *Etoile du Nord*, *Fair Oriana*; *Cineraria*, Mrs. Ward; *Pelargoniums*—*Prima Donna*, *Evening Star*, *Virginium*, *Mme. Von de Weyer*, *Lady Drummond*, *Ignescens superba*, *Carolotta Grisi*, *Magnum Bonum*, &c. (fine); cut flowers. From W. C. Strong, *Fuchsia Souvenir de Chiswick*, a fine specimen, (red); *Geranium Alma*; *Pelargoniums*—*Majestic*, *Regalia*, *Una*, *Lady Drummond*, *Commander in Chief*, *Adele*, *Auguste Meillez*, *Novelty*, *Lablache*, *Prima Donna*, *Evening Star*, *Cloth of Silver*, *Pictum*—a fine display.

From Hovey & Co., *Pæonies*—*alba sulphurea*, *Pottsii*, *edulis superba*, *festiva maxima*, *flavescens*, *grandiflora carnea plena*, *do. nivea plena*, *alba odorata*, *sulphurea*, *Duc de Nemours*; fifteen varieties *Rhododendrons*, fifteen vars. *Azaleas*, three *Petunias* *Inimitable*, two *Emerald*, four *Lantana*, fine, one *Hydrangea hortensis plena*. From J. Breck & Son, cut flowers—*Aconitum*, *Anemone*, *Achilles*, *Antirrhinum*, *Aquilegia* in varieties, *Baptisia*, *Campanula*, *Clematis* in vars., *Delphinium*, *Dianthus*, *Dictamnus*, *dielytra*, *Corydalis*, *Hesperis*, *Gaura*, *Iris susiana* and varieties, *Lamiura*, *Lupinus*, *Lychnis*, *Pæonies*, *Papaver*, *Phlox*, *Spiræa*, *Tradescantia*, *Veronica*, and many others—a fine display.

Flowers in variety from M. Trautman, A. Apple, Mrs. Wm. Ashby, J. A. Kenrick, J. Nugent, Miss E. M. Harris, G. Evers, E. S. Rand, Barnes & Washburn, and others. Contributions were made by many others, but no list was handed to the Chairman, in compliance with the printed rules; among these the Committee would particularly notice the collection of herbaceous plants from Mrs. Bruce of Brookline, and a very tasty floral decoration from Miss Harris of Jamaica Plain.

AWARD OF PRIZES AND GRATUITIES.

HERBACEOUS PÆONIES.—For the best, to M. P. Wilder, \$5.

For the next best, to Hovey & Co., \$4.

AQUILEGIAS.—For the best, to J. Breck & Son, \$5.

For the next best, to Mrs. Wm. Ashby, \$3.

For the next best, to Barnes & Washburn, \$2.

HERBACEOUS PLANTS.—For the best, to J. Breck & Son, \$6.

For the next best, to Barnes & Washburn, \$4.

For the next best, to A. Apple, \$2.

ANTIRRHINUMS.—For the best, to James Nugent, \$5.

RHODODENDRONS.—For the best, to H. H. Hunnewell, \$6.

For the next best, to Hovey & Co., \$4.

GRATUITIES.—To F. Winship, for display, \$2.

To T. G. Whytal, for Pelargoniums, \$3; for Fuchsia Star, \$1.

To J. Nugent, for display, \$2; for Erica ventricosa superba, \$1.

To Gustave Evers for display, \$2; for Testudinaria elephantipes, \$1.

To W. C. Strong, for Pelargoniums, \$4; for Fuchsia Souvenir de Cheswick, \$1.

To Mrs. Bruce, for display, \$2.

To Miss E. M. Harris, for decoration, \$2.

To Hovey & Co., for Lantanas, 1.

To T. G. Whytal, J. A. Kenrick, M. Trautman, E. A. Story, Miss Russell, Miss A. C. Kenrick, and Mrs. Richardson, for displays, \$1 each.

Horticultural Operations

FOR JULY.

FRUIT DEPARTMENT.

June, generally dry and warm, has this year been rather remarkable for the great quantity of rain, which has been nearly double the average. The temperature too has not been high, 92° having been the extreme range of the thermometer. In consequence of so much moisture vegetation has an unusually vigorous and healthy appearance. Owing to the easterly storms of May, fruit has not set near so well as the quantity of bloom promised. Some kinds have almost entirely failed, while others have a fair crop; but, on the whole, the quantity will be much below the average.

GRAPE VINES in the earliest houses will now require to be pruned preparatory to the commencement of forcing next month. Air abundantly night and day. Vines in greenhouses will now be ripening their crop, and will need no other attention than due quantities of air and stopping the laterals. In cold houses this is the critical time, as inattention to airing will be followed by plenty of mildew. Guard well against cold drafts, being careful in giving air except at the top of the house. Water the border if the weather should prove dry, and be free with the use of water upon the floors and walks. Shut the house up early till the grapes have swelled to their full size. Top laterals in season. Grapes in pots, that have had the fruit cut, should be removed to a cool place and sparingly watered in order to get well ripened wood.

PEACH TREES in pots, now ripening their crop, should be more sparingly watered.

STRAWBERRY BEDS, as soon as the fruit is gathered, should be manured and dug, and a fresh crop of runners laid in for next year's bearing.

PEAR TREES should be summer pruned this month. Attend to directions in our former volumes. Continue to thin out all wormy and inferior specimens of fruits.

BUDDING should be commenced the latter part of the month, beginning with the pears.

YOUNG TREES, newly planted, should be mulched, and have one or two good waterings if the weather proves dry.

INSECTS must not be forgotten.

FLOWER DEPARTMENT.

The principal work for the summer having been done, the amateur or gardener can now have a little leisure to enjoy the results of his labors. But even in this pleasant duty he will find something to do. It is the period when opportunity should be taken to correct errors which may have accidentally crept into a collection, that they may not be continued another year. The labors of the coming winter soon begin, and no little anxiety will be felt till all such work is completed, or put under way. The conservatory or greenhouse should now again be gay with achimenes, gloxinias, fuchsias, &c. &c.

CAMELLIAS, now having made their growth, and set their buds, should all be removed from the house to a good situation out doors. Repotting may be done now.

AZALEAS should now be removed to the open air, in a situation similar to the camellias. Syringe often.

PELARGONIUMS should all be headed in this month, and the cuttings put in if a stock is wanted. Keep the plants rather dry after heading down.

CHRYSANTHEMUMS should be shifted into larger pots. Water very liberally, and plunge in the ground, or in tan or ashes.

CINERARIAS should be propagated by cuttings or division of the roots, if not already done. Sow seeds now.

OXALIS HIRTA AND **BOWIEI** should be potted this month.

VERBENAS, for winter blooming, should now be propagated, or small plants potted off into larger pots. Keep them well topped in, to make bushy specimens.

WINTER BLOOMING STOCK of all kinds should now be plunged out in a warm border, where they can be freely syringed and abundantly watered; top the plants throughout the month, to make them stout and bushy. Water occasionally with liquid manure.

ROSES may be propagated by layering or by cuttings.

NEAPOLITAN VIOLETS should be divided and reset now.

MIGNONETTE AND **SWEET ALYSSUM** seeds should be sown this month.

CHINESE PRIMROSE seeds may yet be planted.

CALCEOLARIA seed should be sown this month.

RINGING THE GRAPE VINE.

THE attention which has within a year or two been given to this practice, especially with the vine, in France, and the detailed reports which have been made by M. Bourgeois, to the Imperial and Central Society of Agriculture, in relation to his experiments, induce us to bring it more prominently before our cultivators.

Notwithstanding the increased attention given to every department of Horticulture the last twenty-five years, and especially in relation to the processes for producing early fruiting of various trees, by means of pinching, root-pruning, and transplanting, ringing seems to have been entirely overlooked, and as little said about it as if it was a new and untried experiment, of too little consequence to require especial attention. Even in our own pages, during the entire publication of our Magazine, extending over nearly a quarter of a century, we can find but one important article, contributed by Mr. Downing in 1837, (Vol. III., p. 361,) being a translation of a paper in the *Annals* of the Paris Horticultural Society, by the late Dr. Van Mons, who had turned his attention to the subject, and added considerably to what had already been written upon ringing trees.

But the practice is of very ancient origin, revived with the progress of horticultural science, by Duhamel, who published the result of his experiments in the *Memoire de l'Academie des Sciences*, in 1778. In the early volumes of the *Transactions* of the London Horticultural Society, there are several important papers upon the subject, and Mr. Knight, the President, contributed to the fund of information, and explained the principles upon which the practice was founded; and although Mr. Knight's conclusions are somewhat at variance with the facts, as shown by the experiments of M. Bourgeois, upon the vine, yet his theory is correct. Mr. Knight, however, does not appear to have done much with the vine, his experiments having been confined to fruit trees of various kinds.

We have ourselves practised the ringing of fruit trees for several years, and in nearly every case with the most beneficial results. We have, in some few instances, seen the operation followed with injury to the tree; but in nearly all cases the cause could be traced to an unhealthy specimen; to carelessness in making the incision,—too large for the vigor of the tree to replace the same season,—or to performing the operation too late in the year. The process we have found highly important, and advantageous in hastening the early bearing of many varieties of pears and apples, the two principal fruits upon which we have tried extensive experiments. With the vine we have never tried ringing, though it has occasionally been done by some of our amateur cultivators, and generally with good results. But what few experiments have from time to time been made, with this fruit, have been more from a curiosity to see what could be accomplished than for any other object; the fact, that, conducted under certain rules, it was an important and safe operation, not being known, and indeed not fully established till now, under the repeated and successful experiments of M. Bourgeois, a celebrated French cultivator. So little has the operation been performed that Dr. Lindley, in a notice of these experiments, remarks that “the ringing process is no new invention, although, perhaps, never applied to the vine.”

At another opportunity we shall prepare an account of the practice of ringing fruit trees, and give the results of our own experience, which we have no doubt will be new to many of our readers. At present we conclude our article with an account of the experiments of M. Bourgeois, as translated in the *Gardeners' Chronicle*, believing that it will be read with interest, and in our climate, where so many of our native grapes possess little or no value on account of their late maturity, by the ringing process they may be made to ripen two weeks earlier, and thus our cultivators be enabled to obtain, with a little trouble, all the choice grapes that are at present known. Even the Catawba would mature in our latitude under such a series of carefully conducted experiments as those related below. To what better purpose could our Horticultural Societies apply their funds, than in prizes

for the best grapes of the later kinds, ripened by the process of ringing? May we not hope that the Massachusetts Horticultural Society will lead in this matter, and another year offer a liberal prize, from their able means, to induce our most skilful amateurs and cultivators to undertake experiments, and test the correctness of M. Bourgeois' process when applied to our native grape, so different in habit from the Chasselas and other foreign varieties:—

Can grapes be made to ripen out of doors in this country? Not exceptionally, in very hot summers like the last—but habitually in any summer? Can they be made really to ripen as they do about Paris? that is to say, will they become perfectly sweet, and perfectly colored? Ninety-nine persons in a hundred will say, “No, unless in some very sunny sheltered place;” and that has always been our own opinion. If they could be induced to ripen here, what a valuable source of profit would be offered to market gardeners, to say nothing of private gardens. We might then expect to see at Richmond what may now be seen in the ground of M. Crapotte, near Paris, who has 3000 yards long of trellis, covered with the Chasselas de Fontainebleau, producing him annually 4500 kilos of ripe grapes, worth in the market 12,000 fr. (480*l.*) on an average. (See Journ. Soc. Imp. hort. iv. 202.)*

A new view of this branch of cultivation has been lately taken in France, which, if the published reports can be relied upon, leads to the inference that profitable out-of-doors grape growing in England is by no means so hopeless as has been imagined. It appears that in February, 1857, a M. Bourgeois brought under the notice of the Paris Horticultural Society, from whose Journal we derive our information, the important advantages which arise from ringing the vine, in consequence of the operation hastening the ripening process, “especially in cold and damp climates.” This statement was regarded as

* We recommend to the notice of vine growers, especially of those who advocate rich borders and “horsehair-mattress” gardening, the following description of the soil in which M. Crapotte grows his grapes: “The soil is far from being of first-rate quality; the subsoil is a mass of gypsum and rough stones (*moellons*), covered by a layer of rather light earth; nevertheless it grows vines marvelously.”

being so interesting that a Committee was appointed last autumn to visit the scene of M. Bourgeois' operations. The Committee, which consisted of Messrs. Pepin, Hardy, Cheevet, and Forcet, report to the following effect:—

The residence of M. Bourgeois is at a place called Perray, near Rambouillet, at the highest part of the department of the Seine and Oise, on the borders of the forest of Rambouillet. The soil is of a clayey nature, mixed with pebbles of marl, and is naturally cold and damp. Nevertheless it is suitable to fruit trees, especially to pears, but it requires heavy and frequent manuring.

The Committee reached Perray at 9 A. M. on the 5th October, and immediately proceeded to examine the vines that had been ringed. It had been found in 1856 that the effect of ringing, *under proper conditions*, was to cause the grapes to ripen a fortnight earlier, and to produce larger berries; but several points remained for further determination, and attention had been most especially directed to those points in 1857.

The trellised vines examined consisted entirely of old stools of Chasselas, partly renewed by layering. On the 5th October little difference could be found between the ringed vines and others, because, owing to the hot summer, the ordinary grapes of the neighborhood were all nearly ripe. But M. Bourgeois stated that he had found no reason to alter his opinion in any respect. The time for performing the operation was represented to be after flowering and when the vine is in full growth; but the exact time must necessarily be regulated by the earliness or lateness of the season. As to the breadth of the ring of bark to be removed, M. Bourgeois was of opinion, and the Committee entirely agreed with him, that the ripest grapes and largest berries were formed on the shoots in which the ring was at least a centimetre (about 4-tenths of an inch) broad, and had been made in very good time. Whether the operation had been well performed or not was always shown by a callus having formed at the upper edge of the ring. The Committee, however, observed cases in which a circular cut only had been made, and had produced a good effect; whence they inferred that it is sufficient

if the passage of sap is stopped for a short time. They also report the following experiments which had been tried by M. Bourgeois :—

1. A stool of vine was separated into two arms, and every branch was ringed immediately below the first bunch or as high as possible above their insertion. The rings were about the tenth of an inch wide, and each produced the effect expected; the berries were larger, ripened about a fortnight earlier, and no injury appeared to have been sustained by the vine, notwithstanding the number of wounds it had received.

2. On a similar stool, also divided into two arms, all the branches were ringed, but immediately above the first eye left for pruning. The grapes ripened early, but were small and tasteless. This stool was much exhausted on the 5th October.

3. On a stool, again divided into two arms, one of the arms was ringed four fifths of an inch wide. The ring did not heal, nevertheless the grapes above the ring were fine while those below it were inferior. On the other arm a ring not exceeding three tenths of an inch was removed, and soon healed over. The grapes on all the branches above the ring became very large and fine, while those on the branch below the ring were very inferior. On this arm, after being ringed, one of the branches was also ringed; but no difference was observable in the grapes. Therefore double ringing is useless. Rings on the old wood might have this advantage, that one ring would be enough for 10 or 12 laterals; but it is not certain that such a process would not be injurious, and the Committee recommend experiments to be confined for the present to young wood.

4. Branches above the bunches were disbudded after having been ringed. This produced a bad effect.

5. Ligatures do not answer near so well as rings.

6. Ringing will not prevent the attack of mildew.

7. A branch with three bunches was ringed twice; once above the lowest bunch, and once below the uppermost bunch. The bunch below the lowest ring remained in the usual state; that above the upper ring became very fine and early; that

between the two rings, cut off from both ascending and descending sap, only formed small berries which would not ripen.

The last question to consider was how far ringing affects flavor. Upon this point the report of the Committee is not clear. "Do what you will," they say; "take all the care you can, it is hopeless to obtain near Rambouillet grapes comparable to the fine Chasselas of Fontainebleau. Nevertheless that was the comparison which M. Bourgeois invited us to make. Now the Committee, after having attentively compared the grapes of Fontainebleau with those from the trellises at Perray, *are of opinion that the difference between the two is very slight and difficult to discover.*" So that what it is hopeless to do with any amount of care is really done. May we hope to be excused with our Paris friends for not understanding this conclusion.

Next week we shall have some remarks to make upon this ringing process. In the meanwhile the time is approaching when out-of-doors vines will be in flower and full growth in this country, and we trust that many experiments will be fairly and fully tried with a view to ascertain practically whether it is likely to be advantageous or not.

HOME ARCHITECTURE.—No. V.

BY WILSON FLAGG.

HUMILITY.

THERE is no description of cant more disagreeable than that of Uriah Heep, who professed on all occasions to be perfectly humble, or of those sanctified hypocrites who wear a cloak of humility to conceal their saintly pride. But there must be something pleasing in the virtue of humility, or it would not be so often affected by those who do not possess it. I believe the expression of this quality has never been regarded as one of the beauties of architecture, because this art, from the earliest ages, has been used almost entirely as an instrument

of ambition. Still it is an important quality in Home Architecture, and its merit, if not acknowledged by architects, is clearly recognized in the works of the painters. As modesty is a virtue in the greatest as well as the least of men, in like manner humility sets off the graces of every beautiful house, from a peasant's cottage to the mansion of a nobleman. The public has committed the error of regarding humility as the opposite of grandeur; whereas the opposite of grandeur is littleness or meanness, and the opposite of humility is ostentation. Two opposites cannot be blended in harmony: but the combination of grandeur and humility produces effects which are beyond comparison finer than either of these qualities alone could produce.

Humility in architecture is obtained by the careful avoidance of every appendage, and everything in the style of a building that seems to indicate an attempt, on the part of the proprietor, to render himself conspicuous. We love to see in a dwelling, the evidences not only of the comforts and conveniences of the house, but, so far as they may be made to appear, of certain estimable traits of the proprietor or occupant. "I take care in my solitary rambles," says St. Pierre, "not to ask information respecting the character and quality of the person who owns the seat which I perceive at a distance. The history of the master frequently disfigures the beauty of the landscape." The style of the landscape may also disfigure the reputation of the master. So pleased are we with the evidence of certain virtues, that we are delighted to see them emblemized in the works of nature and art; and if this evidence be wanting in the artificial objects of a landscape, we feel no desire to become acquainted with the people who are associated with them.

But of all sinister qualities, pride is the most easily manifested and the most despicable; for men hate, even while they profess to admire, everything that arbitrarily exalts others above themselves. We dislike, in the dress, manners, and conversation of a man, any appearance that plainly intimates his consciousness of superiority. It is not actual superiority that we dislike, but the show of it, as we are led instinctively to feel assured that the affectation of any quality

is an evidence of the want of it. Envy which, after all, is but hatred of false distinctions,

"a morbid, bitter sense
Of justice, that is prone to take offence
At sight of wrongful inequality,"

always attends false greatness. He, therefore, who aims at admiration, should carefully avoid all those appearances that are liable to excite the envy of his fellow-citizens, who cannot, while under the influence of this feeling, see anything to admire in the object that has excited in their breasts this painful indignation.

It might occur to a critical reader of these remarks, that if the principles they maintain were fully carried out, all houses would be hovels. With equal justice it might be said, if objections were made to covering one's person with jewelry, that one was in favor of restoring the primeval costume of fig-leaves. This rivalry in dress and fine houses is a rivalry in the display of wealth, not of personal qualities; and it is something that will wear away with a better civilization: yet when that era arrives, both the art of dressing and the art of building will be more of a science and less of a pantomime than at the present day. In that era of better civilization people will dress for the sake of two advantages, first that of comfort, and second that of rendering themselves agreeable to others. In the style of dressing of the present time, people have a third object in view—to advertise their wealth. They build houses in many instances also for the same purpose. Such a purpose will be ridiculed like any other folly, when men have become wiser and less idolatrous. At this period humility will be acknowledged as one of the beauties of a house: it is now very generally felt, but not understood.

Humility of expression is aided by anything that causes a house to manifest less elegance and cost than might be discovered by careful examination. A house that cost a hundred thousand may possess this quality, and in one that cost only a thousand it may be entirely wanting. Thus the commander of an army may be modest in his deportment, while one of the menial servants of the soldiery may be a pattern of pride and superciliousness. In architecture all depends on

the manner in which appendages intended for ornament are displayed ; and whether the assemblage of parts seems to have been dictated by a love of beauty and propriety, or by emulation and a feeling of rivalry.

It is a maxim in the arts to avoid raising expectations of pleasure that cannot be gratified. For this reason a perfect orator would avoid high-flown language and a pompous address. He avoids raising expectations, in order that every charming sentiment, every rational argument and every happy turn of wit may strike the hearer with an agreeable surprise, and penetrate more deeply into the mind. Pompous orators and pompous artists enjoy more notoriety ; they are better " stars ;" but their words and works produce no indelible impression on the mind of the public, because their impositions are understood by all intelligent people. The shallowness of such pretensions is more readily discovered in daily conversation, when the speaker or actor is constantly before us. All persons are pleased with a plainly dressed man or woman, whose manners and conversation indicate a high degree of benevolence, intellect and refinement. We note with pleasure the entire absence of any apparent intention to impose upon us by etiquette or by the elegance of their dress. On the contrary, when we are led, by observing the elegant and costly dress of a Lady, to expect a corresponding superiority of manners, refinement and education, and perhaps of personal beauty, and find, on introduction to her, a countenance of vulgar expressions, and manners and conversation that afford incontestable proof of ignorance and vulgarity, we despise her. There is many a quality that becomes despicable only by position. Bad grammar and bad pronunciation may be associated with some of the most noble virtues of the human character. In a laborer's cottage, they might not diminish our respect for the inmates ; but they become contemptible when playing the fool in a fashionable dress.

This principle is at the foundation of our dislike of a house that exhibits promises which, on close inspection, it is found not to fulfil ; as when it appears on a general view to be built for hospitality, and on a near view betrays only selfishness and pretence. Our love of truth affects our opinion of the

arts as well as of human conduct. When certain costly ornaments lead one to look for affluence on the part of the proprietor we are offended with any symptoms of poverty, which may be betrayed by a want of harmony between the building and its decorations. Ornamentation, therefore, should not exhibit individuality. No agreeable expectations of affluence and hospitality should be raised which are liable to be disappointed. Specific objects annexed to the exterior of a house cannot be mistaken for anything but ornament, as ear-rings and other jewelry attached to the human person must pass exclusively for ornaments. On the other hand, there may be something in the style, colors and general fitness of a dress that is highly ornamental, without betraying design on the part of the wearer to make herself conspicuous. The pleasure which is given to the beholder, in any art whatsoever, is always increased, if we manage to conceal from him the cause of his delight. Such is the charm of a simple style of eloquence, or of dress, manners and conversation.

Hospitality is one of the qualities which persons of little wealth often affect by building a large house : but one might as well *phrenologically* affect a superior intellectual capacity, by wearing a hat that is larger than his head. The evidence of the adaptedness of a house to the purposes of hospitality is always agreeable, if we believe that such is its actual purpose. This constitutes one of the beauties of amplitude, and of a number of spacious rooms conveniently arranged. But when a great deal is sacrificed to pride in a house of this description, the spectator doubts the evidences of its hospitality, because they are associated with the plainer evidences of exclusiveness. An elegant house is often united with meanness, which is manifest by the habits of the family. I remember an instance of this kind. A gentleman had built a very costly house which was remarkable for its elegance, its convenience, and its fitness for the purposes of hospitality : but the habits of the family were false to all the promises of the house. Its elegant and spacious rooms were closed night and day ; and in the evening only a single light was seen dimly burning in a back room, where the family were economically assembled with the cook maid, to save the expense of an

additional lamp. Such a combination of meanness and ostentation is, I believe, peculiar to America.

Had this family occupied a house of humble pretensions, their meanness might not have been made conspicuous. But a mean man often satisfies his ambition by erecting a magnificent house, believing that the public will be stupid enough to regard this monument of his extravagance as a proof of his generosity. To such a person a humble house would be very unsatisfactory, because it would seem to him to be wanting in the proof of that munificence which he desires to affect. It is a singular trait in the character of a vain man that causes him to do, for the sake of admiration, those very acts which are calculated to produce contempt. One of the most foolish of acts is to build a costly and elegant house that will serve no other purpose so well as to render the meanness and vulgarity of the owner the more conspicuous by contrast.

But it is not discreditable to build for ambitious purposes, so far as the style of the house is consistent with one's habits of living, and with his resources. Ambition is not a despicable trait of character, if its aim be to gain the approbation of those whose respect is an evidence of merit. If we build a house, let us plan it chiefly with reference to our own wants; but we should dress the outside with reference to the eyes of the public—not to gain admiration, but to afford pleasure to all classes, so far as they are capable of being pleased with what is rational and good. Joined with the satisfaction of pleasing them, is the thought that we may have inspired them with more noble sentiments, by the means we used to add to their rational pleasures.

It is also a benevolent motive that prompts one to endeavor to please his fellow-citizens; but we do not please a man by an attempt to excite his admiration, because such an attempt is less apt to produce admiration than envy. We cannot please our neighbor by outshining him in the glitter of wealth, or by the display of Pharisaic virtues—but every man is charmed by the evidences of real goodness and benevolence. No man comes away, with a feeling of genuine pleasure, from a gaudy display of the idols of another's ambition; but he is always filled with delight by looking at objects that

vividly awaken in the mind those complacent and cheerful feelings, which arise from our sympathy with the domestic virtues. Our enjoyments are multiplied by the visual evidences of abundance unassociated with pride. Our love of virtue is indeed the well-spring of our taste in the arts, unless this taste has been corrupted by the dogmas of arbitrary criticism;—and almost all technical criticism is of this sort. The best rules of criticism are those which are obtained by the careful study of the effects of different works upon our own minds; they cannot be learned by dictation. By studiously analyzing his own feelings almost every man will find that he is not so well pleased with an object that suggests the idea of ambition, as with one that wears the charming expression of repose and humility.

RAMBLES AMONG THE PLANTS OF ESSEX COUNTY, MASS.

A WALK into the open country, or out of the limits of our cities to some spots of untilled earth, where there are no advantageous sites for improvements, at any season of the year, is one of the sweetest and most profitable of occupations. But there are not many people who know how to walk, having never acquired the habit of pedestrian locomotion. Their lower limbs were rather intended for other purposes, and their lungs and livers were better adapted to sedentary employments. Man, as a species, has been classed as a biped animal, but we aver that such is a grave error of earlier writers of natural history. He is bimanous, but not biped. By-and-by we expect to see a membranous extension of the cuticle projecting itself along the arms and hands, and still a mammal, yet a *semi-vespertilionous* creature, so that he may float by a kind of lazy, half-walking, half-flying gait, and be excused from the further use of the lower limbs. In equestrian exercises, such an economy would be excellent, as it would be an improvement upon the centaur of the ancients: and, in spiritual *seances*, it could not be doubted that walking or floating upon the air in public halls or private

parlors, were actual realities, and not circumstances of the excited or deluded imagination. How few humans know how to walk, even for a short distance, becomes apparent from the extraordinary interest awakened at marvellous feats of pedestrianism, such as one hundred miles in one hundred consecutive hours—the object being simply to get over the ground without reference to anything else than time and fatigue.

Some one has said, that the true secret of walking is to saunter. This is the most profitable, and we are sure that it will be found to be the pleasantest. To saunter, according to Walker, and, I presume, according to other dictionary-makers, is “to wander about idly; to loiter, to linger.” Names are not always expressive of facts or of things, as we see in the above-mentioned author; for, though by cognomen a Walker, yet by definition no pedestrian of the true idea. We object to the definition, too; for we cannot admit that sauntering is wandering about idly, nor loitering, though it may be “lingering.” The best saunterers we have ever known,—and our acquaintance is wide,—have wandered at will, but not idly, which intimates no will, but accident, chance. The saunterer, who is the only true walker, has everything *all his own way*, and limbs alow and aloft are at his command and put to their *extremest* possible use. A loiterer has no need of his head, eyes, ears, tongue, unless as undisposable organs of his vitality: but our saunterer finds constant need of eyes for every wee bit of a blossom, now by the trodden path, now on the distant rock, seen only by his vision, unheeded by common sight; need of ears for every rural sound, from chirp of insect to note of bird. No sense, in fine, lies useless; all wait in joyous ministry on him.

Once we found ourselves far up the bed of a mountain stream, where primeval forests and virgin rocks were our only companions; and delighted were we to find in our fellow-pedestrian a genuine and worthy saunterer. The minutest lichen, new to us in our herborization of the day, was equally attractive to him, though he never before had the slightest idea that such a speck claimed a share of organized vegetable existence. How we scrutinized the mossy and

emerald-tinted and ruby-colored walls of the hoarded cabinets of wealth and beauty which Nature, that September day, allowed us to look upon! how we found "books in the running brooks," and wisdom in constantly-produced letters on "stones," more mystic than those of Nineveh, more elaborate than sculptures of eastern cities rescued from the dust of time!

Once, too, not a half day's ride from Boston, it was our excellent good fortune to become acquainted with such a saunterer, to whom every sunburnt granite hill, and every chinky tree trunk were as well known as were his own children,—a genial, patient, observing man, who loved "to linger" behind to look attentively at objects which had puzzled him all his life long, and which he loved the more because they were so puzzling. And we have known some of the gentler sex belonging to this rare but worthy class of walkers, never tiring at the landscape, never weary at the scene.

Our saunterer, the dictionary to the contrary notwithstanding, is the proper and desirable companion for a walk into the open country or for a stroll into the woods, to find profit and pleasure from the exercise. With stout and strong garments, boots or shoes fitted against wet and mud, (they may be a little open by a rent or crack to let out the superabundant moisture, as a departed worthy rendered his when new, by cutting a hole in the upper leather,) with a pocket lens, a tin box, a few smaller wooden boxes, a store of paper, some twine and a trowel, we may venture at all weathers wherever we wish, and the fault will be our own if we return empty handed or uninstructed. For shorter excursions some of these provisions may be dispensed with, yet we strenuously advise the pocket lens, and by all means a pair of spectacles, if the eyesight be defective in distant vision. For, be it remembered, that we set out for seeing, the use of the eyes having very much to do with a good walk. The entomologist will find a store of small wooden boxes of value; the muscologist will need the paper; the culler of bouquets will see something useful in a supply of twine; the amateur floriculturist will understand the craft of the trowel, and the botanist need not

be reminded of the value of his tin collecting box, and of his lens or magnifying glass. We propose, however, a speciality in our present walk, and it shall be a ramble for flowers, so called, or, technically, for the phanerogamous plants, such as grow spontaneously or introduced around our New England cities and towns.

The present taste is for aquariums or vivariums; and old ocean's caves are ransacked for diverse corals, sea-weeds and zoölogical specimens of a diminutive growth. Some new facts are being developed by this artificial culture of marine plants and creatures; and we recommend the taste to such as are likely to be interested in it from the love of novelty or in the pursuit of fashion. We confess an old love for mother Earth the rather, preferring her bosky dells, and shady copses, and deep old woods, to the slippery and slimy rocks, miry ooze and treacherous tides of Neptune's fickle will. We choose the violet-scented meadows, and the smell of the ground newly turned up, and the fugacious but elegant fungi tribes to "the ancient and fish-like smell," the gelatinous medusæ, the fingered starry actiniæ, and the hydra-headed polypes of the great deep. We love far better a weather-stained lichen-ose rock on some breezy hill, than the most gorgeous feathery alga which waves so gracefully in the emerald waters. So we will accept the invitation of the author of the "*Studies of the Essex Flora*,"* and saunter with him occasionally through the season about the limits of Lynn and the towns adjoining, and fill our vasculum with the plants which his labors in such fields have brought to our notice.

It is our good fortune to have formed an acquaintance with Mr. Tracy, the author of a little book, whose title we have just quoted. Ardent, enthusiastic and patient, he finds in nature what he describes her as possessing. "To him who loves nature for her own sake she ever dispenses rewards more precious than gold. Botanical pursuits, though harmonizing well with activity and energy of temperament, are

* *Studies of the Essex Flora*; a complete enumeration of all Plants found growing naturally within the limits of Lynn, Mass., and the towns adjoining, arranged according to the natural system, with copious Notes as to localities and habits. By C. M. Tracy.

yet potent to soothe and tranquilize the fretted spirit; they have all the quieting power which Mudie ascribes to moonlight. I do not wonder that the lamented Oakes, disturbed by the discordance of the jarring interests and conflicting elements of the law, should have taken sanctuary where

‘The groves were God’s first temples.’

Moore, when he wrote of the bowers

‘Where Pleasure lies, carelessly smiling at Fame,’

drew but a very dim outline of that luxurious satisfaction which one feels, when, lounging down with his favorite specimens at noon, on the grassy banks of some merry little brook, with the thousand vertical shadows gamboling among the ferns around him, he gives himself up to the full inspiration of the place. Or, changing the stream for the brink of some pond between the hills, his contemplation alternates from the swift ripples, that break and mutate like the figures in a kaleidoscope, to the upland banks of pleasing contour, spread with dense verdure and counterwrought in the water beneath, or to the soft light and shade that blend through the rounded masses of clumps of oak and hickory, or give additional life to the long lines of ‘willows by the watercourses.’”

Mr. Tracy’s tastes lead him to appreciate that fine specimen of English literature which has made famous a little rural district of Great Britain:—

“No one who has followed rare old Gilbert White through his *Natural History of Selborne*, who has read the *History of the Bass Rock*, or the later volumes of Thoreau,

‘Tasting of Flora and the country green,’

will ask for any labored reason why this little work has been undertaken. Those authors have abundantly shown the pleasant and entertaining nature of local research and description; and we only need look to the enduring reputation of the *Florula Bostoniensis*, as a practical work, to complete the argument, and assure us of the sufficiency of a limited territory to furnish material for profitable thought for a long period of time.

"To Essex County, Mass., may be applied the full force of the remark of Bigelow, that 'the Flora of any considerable section of our territory may furnish full occupation for years.' It has been the scene of the pioneer labors of Cutler and the thorough operations of Oakes; it has given employment by turns to the scrutinizing eyes of Osgood, Nichols and Russell, as well as many others; yet not a few of the localities of this small district seem to remain comparatively unexplored."

The geological features of Lynn and Nahant are strikingly remarkable. Of the latter town more is known, as they lie so open to the sea and so exposed to view. But in the woods and swamps of Lynn are boulders of enormous size and of every shape, and in every conceivable position. Their rugged sides are horridly bristling with Umbilicarias and other black, forbidding-looking lichens, or gracefully draped with the polypodium; gorgeous in their interstices with the scarlet cladonias, or elegant with the frosted stereocaulon. Some of the most delicate spring flowers dispute their upper surfaces with the dry mosses, and the glaucous funistroy vies with the cypripedium and the umbellate thesium. Mr. Tracy, with a few other gentlemen of West Lynn, have explored these regions, and are familiar with the features of the formations.

"A rather striking diversity, both in geological and botanical productions, appears in the territory under notice.

"From the western part of Swampscott an extensive formation of porphyry begins, and, sweeping its northern limit along a gently-curving line, follows the valley occupied by the well-known 'Lakes of Lynn' as far as the Sluice Pond, thence traverses the township of Lynn through its centre, very nearly, and by a direction not far from east to west; then, passing the valley of Saugus River, in the neighborhood of Pranker's factories, tends gradually to the southwest, and is lost in the hills of Malden and Medford. South of this line there is hardly anything but porphyry to be found in the place; to the north there is next to none of it, but the region has all the usual characteristics of one which rests almost wholly on granite.

"As any one versed in the subject of natural scenery might expect, the aspects of these two divisions of country are widely different. In the southerly or seaboard portion, the bold eminences of High Rock, Sadler's Rock, Lover's Leap, Forest Rock, and others, well exemplify the prominent traits of the porphyry; hard, stern and precipitous on the southern side in almost every case, looking with inflexible front toward the sea, as if they were the stout old knights that in ancient time had driven back the onset of its marauding waters; and on the north as uniformly smoothed and rounded, shelving back with a gentle slope, and sinking in the yellow soil of the hills.

"The northern section, so far as it is embraced within the boundaries of Lynn, forms one spacious common forest, known as the Ox Pasture; a district where Nature seems to have dallied long and wondrously with the giants of the age of granite. Long, deep and solid ledges furnish block after block to reward the patience of the quarrymen; and here and there their gaping pits in the hillsides afford a partial sight into one of the many caskets in which New England stores her jewels. But older and sturdier quarriers have wrought here,—the stupendous crush, and jar, and rend of the drift period have seemingly tossed the fragments, of hundreds of tons weight, like footballs, leaving them, in some instances, perched on the brink of precipices, in what would appear the most unstable attitudes, or again, scattering them over the hill-slopes, small and great together,

'Thick as autumnal leaves that strew the brooks
In Vallambrosa.'

"The chemist avers that to cultivate any crop successfully in the field, a studied adaption of the soil to the particular plant in view must ever be made. The converse of this rule would indicate that special characters existing naturally in a soil should give corresponding differences in the kind and style of vegetation which it produces. If I wished for an illustration of this idea, I could hardly find a better case than appears in the two formations under notice.

"In passing through Lynn woods it is not difficult to detect,

even with small experience, the exact line of junction of the granite and porphyry, within a few rods, by the style of vegetation alone. A few examples will make this more definite.

"On the rocky pasture hills that immediately overlook the city of Lynn, the barberry starts in unrestrained abundance, the privet adorns whole acres in early summer with its little clusters of snowy flowers, and the pitch pine and red cedar assert their right to the land with the vigor of feudal barons. When we pass northward over this natural mark, the privet disappears almost entirely, the barberry becomes the exception instead of the rule, the cedars are scarce, and the multitudes of pitch pine are only represented by a few stragglers. To replace them, however, the beech—of which only two specimens grow on the porphyry to my knowledge, and these I suppose to be artificially located—starts up at once almost on the very boundary, and stretches away from thence in vigorous condition towards the woods of Lynnfield. The chestnut, that joy of country lads and squirrels, ventures down into the north of Saugus in commendable strength, but cannot cross the enchanted line without the help of man, and in cultivation grows slowly and timidly, as if it were ill at ease. More remarkable than either, the black larch or *hacmatac*, which, I venture to say, is unknown as a native south of the granitic section, is found growing and thriving within fifty rods of its margin. The blue vervain, the water avens, and the mountain mint, look doubtfully in from the east over the channel of Stacy's Brook, but effect no further progress, and on the west the knapweed, which revels by the wayside on the Chelsea hills, makes no attempt to establish itself on ground from which it is so singularly debarred."

Let us listen to Mr. Tracy's story of his burden and of his wetted feet:—

"When I first angled the purple bladderwort from its oozy couch, and told my comrades that the sight of it was worth a dollar, I was only laughed at for my enthusiasm. When I found a *corydalis* magnificently growing and blooming on the slope of Dungeon Rock, and detaching the whole bunch, earth and all, carried it home in my arms, that the beautiful speci-

men might not be injured, no one could see any good reason for my lugging so much dirt for a few flowers. I was hardly sensitive enough on the point to commence an argument: I had gained a treasure that flowered all summer for me where I set it; and long before its seeding-time, I had forgotten the wet feet I got in Pine Hill Swamp when bringing it home."

Mr. Tracy sets out with his reader on one of his long walks, and occupies the day, from the ocean shore to the source of a little brook, which he finds emptying its crystal waters into the bosom of the sea. He takes him along its pebbly bed, along its swampy sides—onward through fen and thicket, bog and briar; now climbing some hill, now pausing to look at the distant mountain ranges, now scaling the rocks, now enumerating the species of trees, now telling you the modern and ancient names and histories of glassy pond and mimic lake, and now enumerating, at the turning-back place, flowers enough for a rich bouquet, "the purple orchis, the cardinal flower, the Mayblob, the cress, the golden senecio, the charming calla, the dwarf cornel, and the pyrola and fleabanes, coral-roots, willow-herbs, and wild sunflowers."

Mr. Tracy's pamphlet consists of eighty-five pages, and contains most of the plants of the phanerogamous or flowering tribes found in eastern Massachusetts and near Boston. It will serve as an useful *vade mecum* for the collector and general student, as his localities are very particular and precise. Should he issue another edition, we would like to see the grasses, sedges and rushes occupy their appropriate place. The study of these well repays whatever care and labor it requires, and for beauty, "Solomon was not arrayed like one of them." Many species of beautiful ferns are to be found in the limits of Lynn, and as Mr. T.'s little work is intended to assist not only the student of Gray's *Manual*, but also of Bigelow's inimitable *Florula Bostoniensis*, these stray waifs of elegance and singularity, just outside the circle of flowering plants, could be advantageously added to his list. The reader familiar with plants may be surprised at some omissions in the list, and we understand from Mr. T. that he has already detected a few other species since the publication of

his book. Those making Lynn or Nahant their summer residences, would, we think, find advantage in possessing this publication—helping them to find their surroundings more attractive by a knowledge of what vegetable varieties grow spontaneously around them.—J. L. R., *Salem, July, 1858.*

POMOLOGICAL GOSSIP.

STRAWBERRIES IN OHIO.—The exhibitions of strawberries the present season have generally been very fine, owing to genial and timely rains in June, when strawberries usually suffer much from droughts. Reports from the various Horticultural Societies in different parts of the country speak highly of the quality of the varieties exhibited. In Ohio the Cleveland Horticultural and Ohio Pomological Societies have made reports upon strawberries and cherries. Such a difference of opinion exists in the two reports that we copy the following in regard to Hovey's Seedling:—

The Cleveland Horticultural Society, in their report, say that Hovey's Seedling "fully sustains its high character as the first of all strawberries."

The Ohio Pomological Report, made by M. B. Bateham, says "Hovey's Seedling was quite large and handsome, but quite deficient in flavor. All the strawberries of this kind presented the same lack of internal evidence. This was partly to be attributed to the weather, being too hot for this fruit; and partly to the variety, *which is admitted to be one of the poorest in this respect.*" Such a report of the different fruits made with the same degree of intelligence, must be exceedingly valuable to the members.

PEABODY'S SEEDLING.—Generally, this new variety, so highly prized, has not sustained its reputation. Some cultivators speak of it as promising well, but the greater part condemn it as a failure. The President of the Cincinnati Horticultural Society, at a late meeting, where the fruit was exhibited, said "he deemed it among the duties of the Society to give reports to the world of the result of our various experiments in horti-

culture, with a view of giving sanction to products and processes found meritorious, and of exposing such as may be found to be impositions and humbugs; and, with the latter object in view, he felt bound to state his experience with the renowned Peabody strawberry, which with him had proved an out and out failure; from his eight or ten thousand plants he had not more than two hundred berries, and those no more like the drawing of the berry in the United States Patent Office Report than 'I am like Hercules.' Mr. Bowen and Mr. Sandford made similar statements."

In Rochester the reports were more favorable. The experience was not sufficient to form an estimate of its value. Dr. Sylvester fruited it and "considered it pretty good." Mr. Newland had several thousand plants, and considered the flavor of the fruit very good, but not equal to the representations.

In Hartford, Ct., the Peabody does not seem to have been satisfactory. The *Homestead*, in giving a report of the exhibition, says: "One word in regard to Peabody's Hautbois. Not without cause it has been denounced as a humbug. One of our cultivators said Peabody humbugged me once, and I thought it was the last time, but he has done it again. Mr. Mason of Kensington had some Peabody's new Hautbois of fine flavor. Others were inferior, the size of none appeared like that of the larger ones of Mr. Peabody's pictures which he so extensively distributed. We cannot denounce it yet, but must say it promises poorly."

The Fruit Committee of the Massachusetts Horticultural Society pronounce it very deficient in flavor, and, from the specimens exhibited, not very large, or very handsome.

Our own experience of one year is not very favorable. We had a bed fifty feet long of remarkably thrifty plants, but we found it a poor bearer, not setting well, and only a few of the first berries filling up; even the largest berries were very irregular and ill-shaped. Compared with any of the forty or fifty varieties we cultivate it was the poorest bearer of all. It lacks richness and high flavor, being simply sweet, and very dry—wanting in the rich juicy character of a good strawberry.

WILSON'S ALBANY.—So much has been said of this variety that we copy what information we can find in regard to it, not having fruited it ourselves. In Hartford, the *Homestead* says it is of good size,—the largest of equal weight, but by no means so large as Hovey's. The Fruit Committee, we believe, place this on a par with Hovey's Seedling, and awarded premiums accordingly. The *Country Gentleman*, in speaking of it, says the berries measure an inch and a third in diameter.

In Rochester, at the meeting of the Fruit Growers' Society of Western New York, in the discussion on strawberries, Mr. Hooker considered it a remarkably productive fruit, superior in this respect to most, if not all others. The crown is low, and it passed through the winter in the finest possible condition. Clusters of fruit large, size of berries medium, flavor second rate. The berry seemed to be tolerably fair, skin thin.

STRAWBERRIES IN WESTERN NEW YORK.—The Fruit Growers' Society of Western New York held a meeting on the 19th of June, when a fine exhibition of strawberries was made by the cultivators of Rochester and vicinity. The Society proceeded to discuss various subjects connected with horticulture, one of which was, "Strawberries, which are the best for amateurs, and when the best time to plant." As the discussion is interesting, as showing the state of strawberry culture in Western New York, we copy it entire:—

P. Barry, in answer to a question, replied that the Committee meant by *new*, those varieties whose characters were not well known and established—those about which information is needed, as to quality or productiveness.

LONGWORTH'S PROLIFIC.—H. E. Hooker would like the opinions of gentlemen present on Longworth's Prolific.

W. B. Smith, of Syracuse, cultivated this variety. It was hardy and quite prolific.

Dr. Sylvester, of Lyons, found it of medium quality and size, and a good bearer.

Mr. Barry said the varieties of strawberries had increased so much lately, that it was difficult to make out small lists of the best sorts. Most we want to know is the comparative value of each—or the value of particular varieties with reference to

some standard of merit, so that we may learn what kinds have sufficient merit to be retained and cultivated, and what should be rejected.

Mr. Hooker thought that the strawberry season was so short—only about two weeks—it was useless either for amateurs or market growers, to grow twenty or thirty varieties. Five or six varieties are enough, and he would like to have Dr. Sylvester say whether he would retain this sort in a collection of five?

Dr. Sylvester thought he could select five better sorts.

JENNY LIND.—Mr. Barry would recommend Jenny Lind. It is a fair fruit in size and quality, and several days earlier than Early Scarlet. Its earliness makes it very valuable, as it both hastens and prolongs the strawberry season.

HOOKEE.—C. L. Hoag, of Lockport, considered the Hooker one of the best strawberries. For quality it surpassed anything he had cultivated. It is equal in flavor to Burr's New Pine.

Mr. Hooker proved it for several years in his own grounds, before offering it for sale. Thought it then the best variety he had—considers it now the best for amateurs. The berries continue to ripen for a long time, which is an advantage to those who grow for family use, but a disadvantage to those who grow for market, as its color is against it, being too dark to please the public eye. Some kinds, too, would bear larger crops. As the crown is above ground, when grown in hills it is apt to be injured in winter unless slightly protected. This is not the case, however, when it is grown in beds or masses.

Austin Pinney, of Clarkson, considered the Hooker one of the finest berries—if compelled to grow but one, thought he would select this, as there was nothing superior to it for amateurs, though perhaps a little too tender for market. The Cushing he considered an excellent market berry.

Mr. Newland, of Palmyra, liked the Hooker well. Started with about two dozen plants in the spring of 1857, and this year grew about two bushels of fruit. [The specimens of Hooker shown by Mr. Newland were very large and uniform, beautiful specimens.]

WILSON'S ALBANY.—H. E. Hooker considered this a remarkably productive fruit—superior in this respect to most, if not all others. The crown is low, and it passed through last winter in the finest possible condition. Clusters of fruit very large, size of berries medium, flavor second rate. The berry seemed to be tolerably firm, skin thin.

Mr. Barry asked Mr. Hooker which he considered the best, the Hooker or Wilson's Albany?

Mr. Hooker thought the Hooker best for amateurs; the other might be best for market.

Edward Frost considered Wilson's Albany the most hardy and productive, but the Hooker of decidedly the best flavor.

GENESEE.—This variety Mr. Hooker had found hardy, productive, and of fair quality.

Dr. Sylvester had cultivated it for six years, and found it of good quality, and highly productive.

SCOTT'S SEEDLING, MOYAMENSING, PENNSYLVANIA, AND BRIGHTON PINE.—Mr. Barry inquired if members present would state their experience as to the value of these sorts. Scott's Seedling is distinct, a beautiful berry, remarkably productive, but hollow and dry.

Edward Frost found Scott's Seedling to be a great bearer, of fine color, and a good grower.

Mr. Hooker also said Scott's Seedling was very productive, but of very poor flavor. Moyamensing and Pennsylvania were good bearers.

Mr. Barry asked if Burr's New Pine and Hovey's Seedling were not the best pistillate sorts now grown?

Mr. Hooker considered the Crimson Cone superior to either, and one of the best pistillate sorts we have. Burr's New Pine suffers in the winter.

Mr. Newland said, Hovey's Seedling bears no comparison to the Crimson Cone as a profitable fruit.

Dr. Sylvester said his experience was in favor of Burr's New Pine and Hovey's Seedling, and he considered these varieties the best, although he had never cultivated the Crimson Cone. Found the Pine perfectly hardy in the most exposed localities, and had picked bushels of them the present season.

PEABODY'S SEEDLING.—T. G. Yeomans, of Walworth, had a few on exhibition. Had only a few plants. They met his expectations, though they were not very high flavored. Had not sufficient experience to form an estimate of its value.

Mr. Newland obtained seven plants in the spring of 1857; put them in good soil; they grew well, and now he has several thousand plants. It forms runners very rapidly, and the plants, in a bed, are apt to become crowded. Flavor of the fruit very good, but not equal to the representations. Size, large. From present experience, would consider it a very good variety.

Dr. Sylvester had fruited it and considered it pretty good.

EUROPEAN VARIETIES.—The opinions of members on the New Foreign Varieties were now called for, and Geo. Ellwanger recommended the *Triomphe de Gand* as one of the best of this class, both for amateurs and growers for market. It was a beautiful, very large berry, firm in flesh, and in quality might be ranked, perhaps, second rate. In market this large fruit would bring much more per quart than smaller sorts.

Mr. Hooker did not think they would sell for much more than smaller kinds—doubted if *Triomphe de Gand* would sell for three cents a quart more than *Genesee*, and as they are generally shy bearers, he hardly thought they could be grown profitably.

Mr. Barry said the foreign varieties had been cultivated only to a very limited extent. The *British Queen*, and some other varieties introduced some years since, proved very poor bearers here. The later importations of foreign sorts had done better. In many places, both at the East and West, we hear favorable reports of the *Triomphe de Gand*—both as to hardiness and productiveness. The speaker had fruited forty kinds of foreign strawberries, and while most of them were unworthy of cultivation here, two or three, he had no doubt, would succeed. Amateurs, at least, should try these large sorts.

Mr. Newland was much in favor of large berries. They sold better than small ones in market, and cost much less to pick.

Dr. Sylvester had grown some foreign sorts, and thought well of the *Cremont Perpetual*, which he had cultivated for a number of years.

BEST TIME AND MODE OF PLANTING.—Dr. Sylvester preferred a strong soil, but not too heavy, deeply trenched and well manured. Spring is the best time for transplanting. Allow the plants to form runners, and in about three years they become a mass of plants. Then mark off the bed into rows, and with the spade dig under each alternate space. This is done immediately after the crop is gathered. The space thus dug is filled up during the summer with runners from the rows left. The next summer, after the crop is gathered, dig up the spaces left the previous year. This is repeated every season, so that one half the bed is two years old, and the other one year.

Mr. Barry considered spring the best time for planting, though plants may be successfully put out as late as middle of July, with proper care. To secure fine fruit, the plants should be kept in rows. All amateurs should do this. When the plants are allowed to run into a mass they become choked with weeds, which it is almost impossible to eradicate, and young, feeble plants and the bed soon become worthless. On an extensive scale for market, it is thought by many it will not pay, but horse culture might be made use of to mellow the soil and keep down the weeds between the rows. The ground should always be well trenched and well manured.

H. E. Hooker would agree with Mr. Barry, as to the plan for amateurs, but cultivating for market was a very different thing. Preferred to turn over a clover sod, and put the plants in rows four feet apart, and one foot apart in the rows. Cultivate with the horse until the runners spread, so that it is impossible to do so without destroying the plants, and then depend on the hoe. Liked very early planting, in the spring, and before the plants had made much growth.

C. L. Hoag said that Dr. Ward had stated, before the Farmers' Club of New York, that the poorer the soil the better the strawberries, and his experience was not at variance with this theory, as the strawberries he had grown

on the richest soil produced the most foliage, but the least fruit.

Mr. Newland would not cultivate a variety that would not bear a rich soil, and he considered a rich soil necessary to produce a large crop. Always cultivated strawberries in the richest soil he had, and in addition gave heavy dressings of manure. Preferred planting in the spring, though do it sometimes in the summer. Allow the plants to run into a mass. Think the greatest crop is produced in this way, and the cleanest berries. The specimens are larger when grown in rows.

A. Pinney asked if it was not possible to make the soil too rich.

Mr. Newland said that he had never committed that mistake, nor did he expect to, put on as much manure as he would. Had some specimens now growing on the edge of a manure heap, and they were all the better for it.

Mr. Hoag said one of his neighbors, in Lockport, who had the reputation of growing the very finest strawberries, which sold above the market price, always planted in the poorest soil he could find.

Mr. Doolittle, of Oaks Corners, stated that the best strawberries he ever saw were grown on a hard pan, where the surface had been taken off to the depth of a foot.

Dr. Sylvester's experience was in favor of a rich soil and heavy manuring. Preferred growing strawberries in a mass, as it saved mulching, and he thought the berries were richer when grown in the shade of their own leaves.

The discussion on strawberries having closed, it was proposed that each person present should hand in a list of what he considered the five best varieties for market, and the five best for amateur culture. The following is the result of the vote :—

For Amateurs.		For Market.	
Hooker, - - - -	12	Early Scarlet, - - -	8
Burr's New Pine, - -	7	Crimson Cone, - - -	7
Early Scarlet, - - -	7	Wilson's Albany, - -	7
Hovey's Seedling, - -	4	Genesee, - - - - -	5
Wilson's Albany, - -	4	Hooker, - - - - -	4

For Amateurs.		For Market.	
Genesee, - - - -	5	Hovey, - - - -	4
Jenny Lind, - - - -	2	Cushing, - - - -	2
McAvoy's Superior, -	2	Scott's Seedling, - -	2
Triomphe de Gand, -	2	Iowa, - - - -	2
Peabody's Seedling, -	2	Longworth's Prolific,	2
Trollope's Victoria, -	2	Burr's New Pine, - -	2
Walker, - - - -	1	Walker, - - - -	1
Crimson Cone, - - -	1	Cremont, - - - -	1
Cushing, - - - -	1	Peabody, - - - -	1
Chilian, - - - -	1	Triomphe de Gand, -	1
Richardson's Cambridge,	1	Chilian, - - - -	1
Longworth's Prolific, -	1		

We are greatly surprised at the result of the vote in regard to kinds recommended. That any cultivator should, at the present day, consider the Early Scarlet really worth growing is beyond our belief. It must be that the Boston Pine, Jenny Lind, and other large and equally early sorts, are not known. In this vicinity this variety has disappeared from cultivation, the fruit, in comparison with others, scarcely repaying the cost of picking.

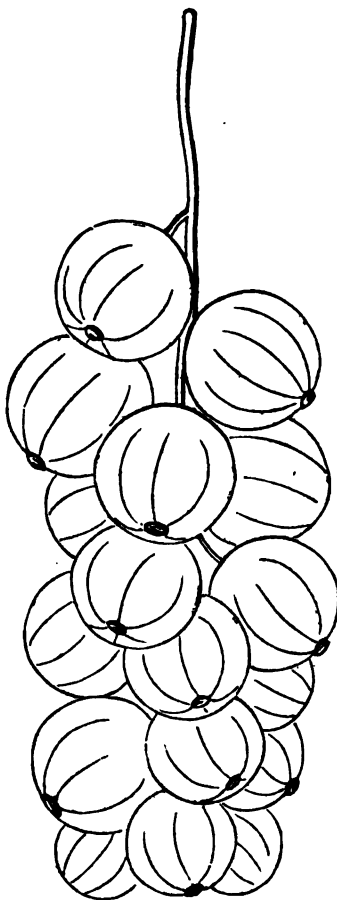
STRAWBERRIES IN ENGLAND.—The June show of the London Horticultural Society at Chiswick was a grand display, especially of fruits, of which fine grapes and strawberries were exhibited. The report is brief of the latter fruit. "Mr. Bailey had a dish of Admiral Dundas; but the finest specimens to look at of any were Sir C. Napier and British Queen, from Mr. Smith." The Sir C. Napier is well known as a very superior variety, and especially valuable from its lateness.

TRENTHAM BLACK GRAPE.—At the same exhibition Mr. Fleming had specimens of his Trentham Black, an acknowledged excellent new grape. They were sent more to show the character of the variety than as examples of superior cultivation. This variety was stated to have been ripe on plants in pots since the beginning of April, and we understand that no fewer than 60 bunches of it were grown under four lights of a common cucumber pit.

LA VERSAILLAISE CURRANT.

BY THE EDITOR.

WITHIN a few years many new varieties of currants have been introduced to notice, principally by the French cultivators,—all, with one or two exceptions, having been from that



16. LA VERSAILLAISE CURRANT.

source. The Cherry, which we figured in a previous volume, (XXI., p. 425,) being one of the largest and most showy, though not equal in flavor to other sorts. This variety, which has been grown by some of our cultivators of immense size, and has been so attractive on this account, is now about to be eclipsed by a new kind, called La Versailles, of which we give the annexed drawing, (FIG. 16,) made from a cluster selected from specimens exhibited by Col. Wilder, before the Massachusetts Horticultural Society last month. It is the largest currant we have ever seen, measuring little more than two inches in circumference. The best specimens of the Cherry we have ever measured would not come up to this. The clusters are also larger than the Cherry, being four to five inches long, and containing from fifteen to eighteen berries. It is also

a handsome variety, the color being deep red, semi-transparent, and in regard to quality it is better than the Cherry, being less acid, and watery.

The bush is a vigorous grower, and abundant bearer. Altogether, La Versaillaise appears to be a currant of much merit. We annex a description :—

Fruit, very large, from six to eight tenths of an inch in diameter, round: *Clusters*, large, usually containing fifteen to eighteen berries: *Color*, bright red, slightly transparent, but not sufficient to show the seeds, as in the Cherry: *Juice*, abundant, less acid than the Cherry: *Seeds*, large.

Other new and desirable varieties of the currant are La Fertile, La Hative, Fertile de Pallua, Fertile d'Angers, La Circassa, &c., and a striped one, called Gloire des Sablons, which is said to be as good as it is beautiful in color. Another year we shall be able to speak more fully of this variety.

But all currants, to produce such specimens as we give engravings of, which are made of the exact size, must be well grown and well pruned; otherwise those who add these kinds to their collections will be disappointed in the crop. Well trenched ground, plenty of manure, and a severe pruning of the new wood to two or three eyes, will alone insure plenty of fine fruit.

NEW ENGLAND SHRUBS.

BY WILSON FLAGG.

THE AZALEA AND ITS ALLIED SPECIES.

In the latter part of May, just after the spring flowers have attained perfection, and while the leaves of the forest trees are sufficiently expanded to display all the peculiar tints attending the infancy of their growth, no wild plant attracts more attention than the Canadian Rhodora (*Rhodora canadensis*.) The flowers, of a bright purple, are in umbels on the ends of the branches, appearing before the leaves are out. The corolla, consisting of long narrow petals, very deeply cleft; the stamens with slender hairy filaments, and the projecting style, resemble tufts of light crimson fringe, glowing with remarkable lustre amid the brown vegetation of the lowlands, not yet green with reviving spring.

The rhodora is from two to six feet in height; resembling the swamp honeysuckle in its manner of growth, but differing in its habits; the flowers of the former appearing all at once, while those of the latter come along in succession, for several weeks. It is one of the most conspicuous ornaments of wet, bushy pastures in this part of the country, and may be regarded as the harbinger of summer, as it is the last in the train of the delicate spring flowers, and by its glowing hues, indicates the approach of a brighter vegetation. No plant attracts the attention of the traveller more than this, in the season of its flowering. When hardly a tree or a shrub has put forth its leaves, the rhodora, spreading its flowers upon the brown surface of the swamp in plats or clumps, of different sizes, sheds a glow of crimson beauty upon the dull landscape, and causes its apparent desert places to "blossom like the rose." The poets have said but little concerning this flower, because it wants individuality. As we look upon the grass as a patch of verdure, so we look upon the blossoms of the rhodora as a patch of crimson and not as an assemblage of individual flowers. Still there is something poetical in the manner in which it adds a rosy wreath to the brows of nature, still pallid with the long confinement of winter.

The American Rosebay (*Rhododendron maximum*) is a more magnificent shrub, but less common than the last in this part of the country, and not associated with our ideas of New England landscape. As it belongs to a genus of plants which are susceptible of improvement by cultivation, almost everybody has learned to admire it from the varieties which are cultivated in the conservatories. As an ornament of the fields, it is not equal to the Mountain Laurel. The latter excels it in the variety of shades exhibited in its colors, and in the delicate beauty of its individual flowers. The rhododendron is very common and abundant in the valleys among the Alleghanies, often clothing a mountain pass entirely with bloom and verdure.

Allied to the rhododendron, but differing from it particularly in the deciduous character of its foliage, is the Azalea, of which two species are well known:—the White Swamp Honeysuckle (*Azalea viscosa*) and the Crimson Azalea (*A.*

nudiflora.) The first is one of the most common of the New England flowering shrubs, possessing a great deal of fragrance and no inconsiderable share of beauty. It comes into flower soon after the rhodora, and is recognized by its sweet scent, like that of the Marvel of Peru, before it is discovered by sight. It is found only in wet places, and loves to suspend its fragrant blossoms over a stream or the borders of a pond, where it blends its odors with those of the white water lilies that are now dotted in profusion upon the surface near the shore. Though it bears no fruit, every rambler is grateful for the fragrance it sheds around him, while wandering in quest of plants, or gathering thimble-berries that grow near the rocks upon the shore. A pulpy excrescence is often found upon this plant, which is familiarly known as the swamp apple. It is eaten by children; but though not disagreeable in flavor, it is nearly insipid, being slightly acidulous and sweet.

A more beautiful, but less common species, is the *Azalea nudiflora*, or Crimson Honeysuckle. It is common in Worcester County, but I believe it has not been found in the eastern part of Massachusetts. This is a smaller shrub than the preceding; it grows more upright and does not seem to have the same preference for wet places. Each of these species are favorite shrubs with the European florists, who, by cultivation and hybridizing, have produced not less than one hundred varieties.

There is no shrub in New England so greatly admired as the Mountain Laurel (*Kalmia latifolia*.) It is perhaps not so showy as the rhododendron, with its deeper crimson flowers; but nothing can exceed it in the individual beauty of its flowers, the neatness of their arrangement, and the delicacy of the shades, as they pass from rose color to white on different bushes in the same group. The flower is monopetalous, expanded into a saucer-shaped blossom, with scalloped edges. "At the circumference of the disc, on the inside, are ten depressions or pits, accompanied with corresponding prominences on the outside. In these depressions the anthers are found lodged at the time when the flower expands. The stamens grow from the base of the corolla, and bend out-

wardly, so as to lodge their anthers in the cells of the corolla. From this confinement they liberate themselves during the period of flowering and strike against the sides of the stigma." This curious internal arrangement of parts renders the flower exceedingly beautiful to a close observation. The flowers are arranged in corymbs at the terminations of the branches, somewhat in the manner of the hawthorn blossoms.

The Mountain Laurel is very conspicuous on the road from Manchester to Gloucester, where it covers large slopes with its evergreen leaves in winter, and its white and crimson flowers in July. We seldom observe anything more brilliant in nature than groups of these plants when in flower, when they appear on the edge of the woods, becoming more scarce as we penetrate into their shade. The groups on the outside of the wood are commonly of a bright rose color that fades as the flowers are less exposed to the sun, until, in the deep woods, they become entirely white. I know no other plant that is so sensitive in respect to color, to the influence of sun and shade. The buds before they expand are of a deeper hue than the flowers, and hardly less beautiful.

The Mountain Laurel delights in wet places, but it is found on springy lands on a hillside, and not in bogs. It often covers the sides of rocky declivities in the woods where there is a good depth of moist earth, and where there has been a partial clearing. In these places the kalmia with its bright evergreen leaves forms beautiful groups of shrubbery, even when it is not in bloom; for it is not less remarkable for the beauty of its foliage than of its flowers. I believe the kalmias are not susceptible of improvement by cultivation. Nature seems to have designedly rescued them from the effects of art by endowing them with a perfection that cannot be improved.

But in this description, the Low Laurel, (*Kalmia angustifolia*) must not be omitted. This seems to be one of nature's favorite productions; for the wilder and ruder the situation, the more abundant is this plant, and the more beautiful its flowers. I have previously expressed doubts of the propriety of naming this plant *lamb-kill*, and do not think an instance can be named in which it has been fatal to sheep or lambs.

The name lamb-kill, or kill-lamb, is a corruption of *kalmia*, as *service* in service-tree is a corruption from the Latin name *Sorbus*. The flowers of the low laurel are of a deep rose color, arranged in whorls around the stem, with the new shoot containing a whorl of leaves surmounting the tuft of flowers. It is stated in an English manual of Medical Botany, that the brown powder that adheres to the petioles of almost every species of *kalmia*, *andromeda* and *rhododendron*, is used in (aboriginal) America as snuff.

FLORICULTURAL NOTICES.

NEW PETUNIAS.—This very beautiful, but not fully appreciated flower, has been greatly improved within the last few years, and now numbers many remarkable combinations of colors, as well as double varieties of great perfection. Only a few of the latter have yet been added to our collections, and these have not yet blossomed freely; but another month will give us an opportunity to witness some of them; of the former we have in flower several sorts. Among them *Inimitable*, a Continental variety, with large purple flowers of great substance, edged and blotched with white; highly attractive and quite unique: also *Louis Van Houtte*, a rosy-colored flower, with a very large clear white throat, and *Louis de Hamonville*, rosy purple, with darkly veined throat and an immense flower. Of striped varieties, a seedling of ours, called the *Flag of America*, is one of the most distinct we have yet seen; being a very marked improvement on *Glory of America*, and remarkably constant. We shall notice other new ones as they bloom.

HYDRANGEA HORTENSIS PLENO.—A French variety under this name is now blooming with us in great beauty. The heads of flowers are very large, and each flower slightly double. It blooms very freely and abundantly.

LILIUM GIGANTEUM.—This noble lily has, we learn, just flowered in the nursery of Messrs. Parsons & Co., of Flushing, L. I. The specimen was not so large as those that have

flowered in England, attaining only the height of eight feet. Probably the bloom was rather premature, as it requires three or four years to grow the bulbs to the full size for a fine bloom. Our own specimens, though remarkably large, being four years old, have not yet flowered. It is a magnificent plant.

NEW FUCHSIAS.—The new fuchsias of the present year are remarkably fine. Catherine Hayes, Souvenir de Chiswick, Gen. Williams, Emperor Napoleon, and Wonderful, are superb varieties, with broad spreading corollas, and finely reflexed sepals. Princess Royal and Countess of Burlington, are two white corollaed kinds, of much better growth and freer bloomers than the older kinds.

409. *BEGONIA CINNABARINA* Linden. CINNABAR-FLOWERED
BEGONIA. (Begoniaceæ.) Mexico.

A stove plant; growing two feet high; with yellow and scarlet flowers; appearing in autumn; grown in sandy peat and leaf mould; increased like the achimenes. Bot. Mag. 1856, pl. 5096.

A new species, very nearly resembling the well known *Gésnera zebrina*. The only difference is in the flowers, which are banded with white beneath, and the lobes of the corolla are spreading instead of erect. It is a showy and handsome plant. (*Bot. Mag.*, March.)

410. *HYDRANGÆA CYANE'MA* Nutt. BLUE STEMMED HY-
DRANGÆA. (Saxifragaceæ.) Bhotan.

A half hardy or hardy shrub; growing three feet high; with white flowers; appearing in summer; increased by layering; grown in light peaty soil. Bot. Mag. 1856, pl. 5098.

A new and interesting species of hydrangea, discovered by Mr. Booth in Bhotan, and introduced by Mr. Nuttall. It is intermediate in characters between *H. robusta* and *H. stylôsa*. The flowers are in large corymbs, spreading and rather loose. The imperfect ones are white, veined with purple; pedicels red; leaves pubescent. In England it is hardy, but with us would probably require the protection of a greenhouse. (*Bot. Mag.*, March.)

411. *EUGE'NIA LU'MA* Berg. POINTED-LEAVED EUGENIA.
(Myrtaceæ.) Chili.

A greenhouse plant; growing three feet high; with white flowers; appearing in summer; increased by cuttings; grown in light rich soil. Bot. Mag. 1856, pl. 5040.

A charming shrub from the open border of Messrs. Veitch's nursery, who introduced it from Chili, where it was found by Mr. Lobb. "It is quite equal in beauty to our common myrtle, and no more need be said to recommend it as an ornamental evergreen shrub from our garden." It blossoms in summer, when the branches are literally loaded with white blossoms, almost concealing the copious foliage. The leaves are broader than the common myrtle, and suddenly and sharply apiculated. It grows in the cooler parts of Chili. (*Bot. Mag.*, March.)

412. *DASYLIRIUM GLAUCOPHYLLUM* Hook. GLAU-
COUS LEAVED *DASYLIRIUM*. (*Asparagineæ*.) Mexico.

A greenhouse plant; growing thirteen feet high; with greenish white flowers; appearing in summer; increased by seeds; grown in light rich soil. *Bot. Mag.* 1856, pl. 5041.

Similar in general appearance to the *D. acrotrichum* described in our July number. The seeds were received from the same source. The plant does not grow quite so high, and the spikelets are slightly different in color. The leaves are similar, but have an erect and rigid habit. (*Bot. Mag.*, March.)

413. *NIPHÆA ALBO LINEATA*, VAR. *RETICULATA* Hook. WHITE-
LEAVED *NIPHÆA*. (*Gesneriaceæ*.)

A stove plant; growing a foot high; with pale bluish flowers; appearing in summer; increased by the tubers; grown in sandy peat and leaf mould. *Bot. Mag.* 1856, pl. 5021.

A pretty plant with handsome variegated leaves, purple and green on the upper side, distinctly lined with white, and reddish beneath. The flowers are small, bluish or lilac, and appear at the axils of the leaves. In general appearance it resembles some of the achimenes, and is grown in the same manner. (*Bot. Mag.*, April.)

414. *CAMELLIA ROSEIFLORA* Hook. ROSE-FLOWERED CAMEL-
LIA. (*Ternstroemiaceæ*.) China.

A greenhouse shrub; growing three feet high; with rose-colored flowers; appearing in winter; increased by cuttings and inarching; grown in loamy peat and sand. *Bot. Mag.* 1856, pl. 5044.

A single flowered species of the camellia, somewhat resembling the old *C. euryoides*, but with larger flowers, though less in size than the *C. japonica*. The history of the present species is not known. It is robust in habit, but rather lax

and straggling in growth, and producing freely its pretty rose-colored single flowers. (*Bot. Mag.*, April.)

415. *PENTSTEMON JAFFREYA'NUS Hook.* MR. JAFFREY'S
PENTSTEMON. (Schrophularinæ.) North California.

A half hardy (or hardy) perennial; with red and blue flowers; appearing in summer; increased by seeds and cuttings; grown in good garden soil. *Bot. Mag.* 1836, pl. 5045.

A very handsome *Pentstemon* from North California, from whence seeds were sent by Mr. Lobb to Messrs. Veitch, in whose collection it flowered in August last. Its nearest affinity is *P. speciosa*, from which, however, it is very distinct and far more beautiful; the flowers very large, and having that mixture of colors which is so unusual, viz., of bright blue and red; the throat of the corolla being red, and the limb bright blue. In England it has proved hardy, and may prove so here; Dr. Hooker says it will form an interesting addition to our hardy herbaceous and especially "bedding out" plants. (*Bot. Mag.*, April.)

416. *BEGO'NIA WAGENERIA'NA Klotzsch.* MR. WAGENER'S
BEGONIA. (Begoniaceæ.) Venezuela.

A greenhouse plant; growing two feet high; with white flowers; appearing all summer; increased by cuttings; grown in light rich soil. *Bot. Mag.* 1836, pl. 5047.

A pretty summer blooming species, of less beauty than many of the new kinds, but yet possessing a deep yellow green foliage, and bright red petioles and peduncles, the latter of which are terminated with "very numerous, white, starry flowers, yellow in the centre." It blossoms for a long time. (*Bot. Mag.*, April.)

417. *POLYGONA'TUM RO'SEUM Kunth.* ROSE-FLOWERED SOLO-
MON'S SEAL. (Smilaceneæ.) Siberia.

A hardy plant; growing two feet high; with rose-colored flowers; increased by division of the roots; grown in peaty soil. *Bot. Mag.* 1836, pl. 5049.

A very fine plant, with linear lanceolate leaves, and axillary clusters of tubular rose-colored blossoms. It is a native of Altaic Siberia, and also of Himalaya, at great elevations, and will undoubtedly prove hardy, and form a fine companion to our handsome but much neglected, because common, Solomon's seal. (*Bot. Mag.*, May.)

418. *CLIAN'THUS DAMPIE'RI* *All. Cun.* DAMPIER'S CLIAN-
THUS. (Leguminosæ.) New Holland.

A greenhouse plant; growing three feet high; with crimson and purple flowers; appearing in spring; increased by cuttings; grown in leaf mould, peat and sand. *Bot. Mag.* 1838, pl. 5051.

A new and splendid species of the well known *Clianthus*, of which the *puniceus*, formerly much cultivated, is now neglected. The flowers in size equal those of the *C. puniceus*, "but in richness of color far superior, for the uniform crimson of the petals is relieved by the velvety purple black disk of the standard of the petals. The leaves are glaucous and hoary all over with long whitish silky hair." This roughness will undoubtedly render it less liable to the attacks of the red spider, which infest and destroy the *puniceus*. It flowered for the first time last year in the collection of Messrs. Veitch, and specimens exhibited by them at Chiswick were unusually attractive, and justly obtained the silver medal. The species was discovered as long ago as 1699, but never introduced till now. It is a splendid plant. (*Bot. Mag.*, May.)

419. *FRITTILLARIA GRÆCA* *Boiss and Spruner.* GREEK
FRITTILLARY. (Liliacæ.) Mount Hymettus.

A hardy bulb; growing six inches high; with white and crimson flowers; appearing in April; increased by offsets; grown in good light soil. *Bot. Mag.* 1838, pl. 5052.

A new and pretty *Fritillaria*, which has proved hardy in England. Like the other species, it blossoms early, and it is but slightly different from *F. tulipifolia*. (*Bot. Mag.*, May.)

420. *RHODO'DENDRON ARGENTUM* *Hook fil.* SILVER-LEAVED
RHODODENDRON. (Ericacæ.) Sikkim Himalaya.

A half hardy shrub; growing ten feet high; with white flowers; appearing in spring; increased by layering and grafting; grown in sandy peat. *Bot. Mag.* 1838, pl. 5054.

"Certainly among the finest of the many fine *Rhododendrons*, discovered by Dr. Hooker," who found it on the summit of Sinchal, Suradah, and Tonglo, at an elevation of 8,000 or 10,000 feet, forming a tree thirty feet high. Even in its flowerless state it is a noble plant, on account of its foliage, the leaves being often a foot in length and broad in proportion, always silvery beneath.

Another interesting state is in the early spring, when the new leaf-buds are forming; these are long and clothed with

colored imbricated large scales, so as to look, as Dr. Hooker remarks, like the cone of some species of pine. Still more interesting is the plant with its head of handsome flowers, pink in bud, gradually whitening as they expand, and having at the base of the lobe within, a rich dark blood purple spot surrounding the stamens, quite conspicuous in a full front view of the flower. A plant three to four feet high, blossomed for the first time in England, at the Kew garden, in March last. The great elevation from whence it comes induces us to hope that this and some of the other species will prove hardy in our climate, especially south of Philadelphia. (*Bot. Mag.*, June.)

General Notices.

RHODODENDRON NUTTALLI.—The flower cone of this rhododendron is now open. The ten campanulate, fragrant flowers were, when opening, of a greenish yellow, but soon became beautifully creamy white, with occasional blotches of red or rose. In the interior of the flower the ribs spreading from the indentations between the petals to the base of the tube, are yellow. The largest flower is six and a quarter inches in diameter, its length four and a half inches without the peduncles; diameter of the whole corymb twelve and a half inches. There are ten stamens, whose filaments are, as those of *Dalhousieanum*, villous below. Like as in *Edgeworthi*, the flowers are glaucous on the outside. On the whole, this majestic rhododendron resembles very much *Dalhousieanum*, but is much larger in all its dimensions.—(*Gard Chron.*, 1858, p. 361.)

WARDIAN CASES.—It appears to me that the plan which I have practised with regard to substitutes for Wardian Fern cases is cheaper and safer than that of Mr. Forsyth. I have bought ordinary earthen milk pans, costing according to size from 8d. to 16d.; I have filled these with silver sand and plunged the ferns in pots in the sand, covering the latter with glass close up to the brim of the pans, so that my structures look exactly like those of Mr. Forsyth. The spaces between the pots are covered with mosses, or seedling ferns, always abundantly to be picked up in the Fernery. The outside of the pans may be ornamented by the painting brush. By these means I can always have indoors such of the choicer ferns as may be required for observation or ornament. For the benefit of those who may not be aware of it, I will still add that according to my experience nothing seems to favor the growth of ferns so well in a small fernhouse as the placing all pots with plants into other empty ones.—(*ib.*, p. 218.)

Societies.

AMERICAN POMOLOGICAL.

The Seventh Session of this National Institution will commence at Mozart Hall, 663 Broadway, in the city of New York, on Tuesday, the 14th day of September next, at 10 o'clock, A. M., and will be continued for several successive days.

Among the objects of this meeting are the following: To bring together the most distinguished Pomologists of our land, and, by a free interchange of experience, to collect and diffuse such researches and discoveries as have been recently made in the science of Pomology—to hear Reports of the various State Committees and other district associations—to revise and enlarge the Society's Catalogue of Fruits—to assist in determining the synonyms by which the same fruit is known in America or Europe—to ascertain the relative value of varieties in different parts of our country—what are suitable for particular localities—what new sorts give promise of being worthy of dissemination—what are adapted to general cultivation; and, especially, to concert measures for the further advancement of the art and science of Pomology.

The remarkable and gratifying progress which has recently been made in this branch of rural industry, is in no small degree attributable to the establishment and salutary influences of our Horticultural and Pomological Societies, the proceedings of which have been widely promulgated by the press. A great work has been already performed, but a greater still remains to be accomplished. It is, therefore, desirable that every State and Territory of the Union and the Provinces of British America should be ably and fully represented in this Convention, and the Pomological, Horticultural, and Agricultural Societies, within these limits, are hereby requested to send such number of delegates as they may deem expedient. Nurserymen, fruit growers, and all others especially interested in Pomology, are also invited to be present, and to participate in the deliberations of the meeting.

Held as this Assembly will be, in the great commercial emporium of our country, easily accessible from all parts of this continent, and at the same time when the Convention of the Editors of the Agricultural Press will be in session, it is anticipated that the attendance will be larger than on any former occasion, and the beneficial results proportionably increased.

In order to increase as much as possible the utility of the occasion, and to facilitate business, members and delegates are requested to forward specimens of fruit grown in their respective districts, and esteemed worthy of notice; also, papers descriptive of their mode of cultivation—of diseases and insects injurious to vegetation—of remedies for the same, and to communicate whatever may aid in promoting the objects of the meeting. Each contributor is requested to make out a complete list of his specimens,

and present the same with his fruits, that a report of all the varieties entered may be submitted to the meeting as soon as practicable after its organization.

For the purpose of eliciting the most reliable information, the several Fruit Committees of States, and other local associations, are requested to forward to Hon. Samuel Walker, General Chairman of the Fruit Committee, Roxbury, Mass., or to P. Barry, Esq., Secretary of the Society, Rochester, N. Y., a definite answer to each of the following questions, at an early date, and prior to September 1st:

What six, twelve and twenty varieties of the Apple are best adapted to a family orchard of one hundred trees, and how many of each sort should it contain? What varieties, and how many of each, are best for an orchard of one thousand trees, designed to bear fruit for the market?

What six and twelve varieties of the Pear are best for family use on the Pear stock? What varieties on the Quince stock? What varieties, and how many of each of these, are best adapted to a Pear orchard of one hundred or of one thousand trees?

What are the six and twelve best varieties of the Peach for a family orchard? What are the best varieties, and how many of each, are best adapted to a Peach orchard of one hundred or of one thousand trees?

Answers to these questions should be made from reliable experience, and with reference to the proximity or remoteness of the market?

Societies will please transmit to the Secretary at an early day a list of the Delegates they have appointed.

Gentlemen desirous of becoming members can remit the admission fee to Thomas P. James, Esq., Treasurer, Philadelphia, who will furnish them with the Transactions of the Society. Life Membership, twenty dollars; Biennial, two dollars.

Packages of Fruits may be addressed to WM. S. CARPENTER, Esq., 468 Pearl street, New York.—MARSHALL P. WILDER, *President, Boston, Mass.*; P. BARRY, Esq., *Secretary, Rochester, N. Y.*

Massachusetts Horticultural Society.

ROSE SHOW, *June 25th and 26th, 1858.*—The Rose Exhibition of the Society was held on Friday and Saturday, the 25th and 26th of June. The weather had been fine the previous days, and the display of flowers was large and unusually fine,—better indeed in regard to some of the collections than ever before made. The days were fine, and the exhibition attracted much attention, Horticultural Hall being thronged with visitors both Friday and Saturday. Most of the collections were renewed on the second day, and in many cases with better blooms than on the day previous. We have

not time to go into the details of the exhibition, but simply name some of the choicest roses in the several collections:—

June Roses.—Paul Perras, Chenedole, Shakespeare, Latour l'Auvergne, Venus, Mad. Hardy, Madame Legras, Boula de Nanteuil, Madeleine, Louis Philippe, Mad. Plantier, Melanie, Amiable, Cynthie, Coupé de Hebe, Paul Ricaut, Edouard du Colbert, L'Obscurité, Vandael, Geo. IV., &c.

Hybrid Perpetuals.—Lord Raglan, Giant de Betailles, Jules Margottin, La Reine, Infant de Mont Carmel, Baron Prevost, Leon des Combats, Prince Leon, Mrs. Elliott, Alexander Backametoff, Caroline de Sansal, Prince Chipetouzekoff, Sydonie, Standard of Marengo, Auguste Mie, and Charles Bossiere.

Moss Roses.—Glorie des Mosseuses, Madame Rochelambert, Marie de Blois, Alice Leroy, Duchess d'Abrantes, Celina, Crested, Old Moss, Luxembourg, &c.

Noisettes, Teas, &c.—Solitaire, Amie Vibert, Glorie de Dijon, Bougere, and Souvenir de la Malmaison.

The following were the principal contributors:—From W. J. Underwood, Hardy Perpetual, June, Moss, and tender roses. From W. C. Strong, Hardy Perpetual, Moss, and June roses. From Jos. Breck & Son, a very large collection of June, Moss, and Hardy Perpetual roses. From G. Evers, twenty-five varieties of Perpetual and a fine collection of tender roses. C. Copeland sent a fine lot of Solitaire, and other tender roses, with Moss and June roses. From G. G. Hubbard, Cambridge, tender, Hardy Perpetual, June and Moss roses, in variety. From A. Apple, Cambridge, twenty-five fine varieties named Perpetual Roses. From James Nugent, Jamaica Plain, Tea and Hardy Perpetual roses. From F. Winship, Brighton, Tea, June, and Perpetual roses in variety; Pot Plants, Fuchsias, Russelles, cactus, begonia, geraniums, &c. From Thomas G. Whytal, West Roxbury, roses in variety, pot plants, new fuchsias, &c. From A. Bowditch & Son, West Roxbury, June, tender, and Perpetual roses, in variety. Roses were also contributed by several other cultivators.

From Hovey & Co., a large collection of June roses, twenty-five varieties of Moss, twenty-five of Hardy Perpetual, and a collection of tender roses; also, twenty varieties of pæonies, including several of the new dark ones; such as Francis Ortegal, Prince Prosper d'Arenberg, *Violacea plena*, *Pottsii pleno*.

We regret we did not obtain the names of the flowers in the stands, which obtained the first prizes. In anticipation that the several lists furnished by the contributors would be published by the chairman, we neglected to take them, and can now only give those of the flower in class for thirty June roses. These were from Hovey & Co., and included the following:—Shakespeare, Boula de Nanteuil, Mad. Hardy, Madame Legras, Venus, Mad. Plantier, Geo. IV., Chenedole, Paul Perras, Chas. Fouquier, Amiable, Sir W. Scott, Coupe d'Hebe, Vandael, Painted Damask, Cynthie, Meteor, L'Obscurité, Bizarre Marbré, Dauberton, Latour l'Auvergne, Edouard de Colbert, Margaret Mary, Fulgens, Kean, Marquis of Lothian, Gil Blas, Glorieux, Thurette, and Madeline.

AWARD OF PREMIUMS AND GRATUITIES.

JUNE ROSES.—

Class I. For the best thirty named varieties, to Hovey & Co., \$8.

For the next best, to J. Breck & Son, \$6.

Class II. For the best twenty named varieties, to Hovey & Co., \$7.

For the next best, to J. Nugent, \$3.

For the next best, to J. Breck & Son, \$4.

Class III. For the best twelve named varieties, to Hovey & Co., \$5.

For the next best, to J. Nugent, \$3.

For the next best, to A. Bowditch & Son, \$2.

CLIMBING ROSES.—For the best display, to C. Copeland, \$4.

For the next best, to J. Nugent, \$3.

HARDY PERPETUAL ROSES.—Class I. For the best twenty-five named varieties, to Gustave Evers, \$7.

For the next best, to Hovey & Co., \$5.

For the next best, to A. Apple, \$4.

For the next best, to F. Winship, \$2.

Class II. For the best fifteen named varieties, to W. C. Strong, \$5.

For the next best, to Thomas G. Whytal, \$3.

For the next best, to G. J. F. Hyde, \$2.

Class III. For the best ten named varieties, to Hovey & Co., \$5.

For the next best, to J. Nugent, \$4.

For the next best, to Thomas G. Whytal, \$3.

MOSS ROSES.—For the best display, to Hovey & Co., \$3.

For the next best, to J. Breck & Son, \$2.

TENDER ROSES.—For the best display, to C. Copeland, \$5.

For the next best, to G. Evers, \$4.

For the next best, to Hovey & Co., \$3.

For the next best, to A. Bowditch & Son, \$2.

PINKS.—For the best display, to J. Breck & Son, \$5.

For the next best, to Barnes & Washburn, \$3.

GRATUITIES.—To W. C. Strong, for plants, \$4.

To F. Winship, for plants, \$3.

To G. Evers, for plants, \$2.

To T. G. Whytal, for plants, \$2.

To J. Nugent and Bowditch & Son, for plants, \$1 each.

To Hovey & Co., for Bouquets of Roses, \$2; and to T. G. Whytal for the same, \$1.

To J. Breck & Son, for Roses, \$5; and for the same to G. G. Hubbard, \$3; to W. J. Underwood, \$2; to J. Murray, \$2; to M. Trautman, \$1; to J. Nugent, \$1; to A. Bowditch & Son, \$4; to C. Copeland, \$2; to Hovey & Co., \$3; to W. C. Strong, \$2; to W. Heustis, \$1; to S. Blagge, \$1.

To J. A. Kenrick, for *Magnolia macrophylla*, \$1.

July 17.—*Exhibited.* FLOWERS: From W. J. Underwood, fifty varieties of carnations and picotees, a very choice collection. From E. S. Rand, jr., gloxinias, begonias, *Nymphaea corulea*, phlox, *Gesneria longiflora*, trache.

lium, fuchsias. From S. Sweetser, twenty varieties seedling pinks. From A. Apple, twelve varieties hollyhocks, ten of phlox, roses, spireas, carnations, oleander, asclepias, delphiniums, pyrethrum, &c. From C. Copeland, cut flowers in variety and bouquets. From M. Trautman, ten varieties seedling carnations, roses, verbenas, spirea, carnations, bragmansia, fuchsia Chameleon (new), one Chironia frutescens, one Trachelium ceruleum, &c. From G. Evers, seedling carnations, gloxinias, roses, spireas, &c. From F. Winship, cut flowers in variety; twelve named fine varieties hollyhocks. From J. Nugent, sweet peas, phloxes, spireas, hydrangea, carnations, picotees, yucca, and bouquets. From W. Heustis, picotees and carnations.

From Hovey & Co., thirty varieties carnations and picotees, and a collection of fine seedlings. The names of the flowers which obtained the prize were as follows :—

Carnations : Acca, Orion, and Maid of the Mist.

Picotees : Evening Star, Chieftain, Prince Albert, Joan of Arc, Lady Bird, Ascendent, and Eliza.

AWARD OF PREMIUMS AND GRATUITIES.

CARNATIONS AND PICOTEES.—For the best, to Hovey & Co., \$5.

For the next best, to W. J. Underwood, \$4.

For the next best, to J. French, \$3.

HOLLYHOCKS.—For the best, to F. Winship, \$5.

For the next best, to A. Apple, \$4.

For the next best, to Barnes & Washburn, \$2.

SUMMER PHLOXES.—For the best, to Breck & Son, \$5.

For the next best, to A. Apple, 4.

GRATUITIES.—To J. Nugent, \$3; M. Trautman, \$2; J. Hyde & Son, \$3;

G. Evers, \$3; A. Bowditch & Son, \$3; and W. Heustis, \$1, for pinks.

To A. Bowditch & Son, \$2, for hollyhocks.

Obituary.

DEATH OF STEPHEN H. SMITH.—The death of this well known and intelligent cultivator is announced in the Rhode Island papers. For a long time Mr. Smith has been one of the leading pomologists of his native State. He was one of the founders of the Rhode Island Horticultural Society, and its first president. A well written notice of his death in the *Homestead*, says: "Horticulture was with him a speciality, and no man in the State has given so much time and attention to it, or devoted himself with more zeal and enthusiasm. Though unacquainted with botany as a science, he was a remarkably close observer of any product of the vegetable kingdom, and procured a vast fund of information respecting indigenous plants, and a respectable knowledge of cultivated species. Fruits, however, were his special favorites, and it was conceded by his fellow members of the Horticultural Society that no man in the State was his equal in respect to a knowledge of all our cultivated fruits. Mr. S. was for a quarter of a century the

pioneer in horticulture in his State, and stood nearly alone during that period in his efforts, which were untiring and most enthusiastic, to diffuse a knowledge and promote the extension of that beautiful branch of human industry. It was not until within fifteen years that the labors of Mr. S. began to be appreciated or felt, and when the Horticultural Society was established, he found himself surrounded by a considerable number of co-laborers, who sympathized with his feelings and taste and partook of his zeal. He was the animating spirit of that Society for a long time, and its prosperity and success are due in a greater measure than to any other source, to his large experience and ceaseless efforts."

Mr. Smith was intimately acquainted with all the Eastern varieties of apples, and contributed much valuable information in Mr. Kenrick's *American Orchardist*, published twenty-five years ago. It was through him that most of the Rhode Island fruits were made known to our cultivators.

The Rhode Island Horticultural Society, at a late meeting, passed resolutions in relation to his death, in which they truly state an irreparable loss has been suffered in the death of Stephen H. Smith.

MR. GEORGE MCEWEN, the superintendent of the London Horticultural Society's Garden, at Chiswick, died on the 10th of May, in the 38th year of his age. During the fourteen months he had acted as superintendent, he evinced so much skill and energy as to make it a subject of the most lasting regret, that so great a spirit dwelt in so frail a body.—(*Gard. Chron.*)

MR. ROBERT BROWN, the most eminent botanist of the present day, died at his residence in Dean Street, London, on Thursday, the 10th of June. A long obituary of his decease was commenced in the *Gardeners' Chronicle*, to be completed in a number not yet received. We have only room to give a brief account of the meritorious services he has rendered in behalf of botanical science.

Dr. Robert Brown was born Dec. 21, 1773, at Montrose, Scotland. But little is known of his early life, beyond the fact that he was educated at the Montrose Grammar School; afterwards studied medicine at the Edinburgh University, where his love for botany was fully developed under Dr. Rutherford, the professor at that period.

Having taken his diploma, he was appointed surgeon to a regiment of Scotch Fencibles, at which period Mr. Brown became known to Sir Joseph Banks, and a friendship was thus commenced between these eminent men, which only terminated with death.

At the close of the last century, Mr. Brown was selected by Sir Joseph Banks to accompany the expedition to Australia. He sailed in 1801, and during three weeks after his arrival in Southwest Australia, collected no fewer than five hundred species of plants; subsequently he visited New South Wales. On his return to England, in 1805, he published the botanical results of the voyage. Soon after this he succeeded Dr. Dryander as librarian to Sir Joseph Banks, and also received the appointment of librarian to the Linnean Society of London.

On the death of Sir Joseph Banks, in 1823, Mr. Brown became, by his will, possessor of the Banksian Herbarium for life, together with the surrender

of the lease of Sir Joseph's house, in Soho Square, which he continued to occupy until his death; a portion of it being let to the Linnæan Society till the expiration of the lease, when the Society removed to Burlington House. For several years Mr. Brown held the office of president of the Linnæan Society; this he resigned in 1853. Since which he has ceased to take an active part in scientific pursuits or societies.

For more than half a century, Mr. Brown has been universally recognized as the first of living botanists; one, moreover, who has proved himself second to Linnæus alone, of all his predecessors in that department of science. His labors and writings have had a great influence upon the progress of botany, and his death is felt with melancholy regret.

Horticultural Operations

FOR AUGUST.

FRUIT DEPARTMENT.

The month of July, though accompanied with a few very warm days in the early part, has been cooler than the average. Heavy showers have kept the ground cool and moist, and vegetation never looked better at this season, though some things are perhaps not quite so forward as usual. Fruit has swelled up well, and what there is promises to be better than usual.

Now is the proper time to repair and put forcing-houses in order for the winter. Flues should be looked after, and, if painting is to be done, now is the time to attend to it. This, also, is the most leisure time to look after soils, and have them collected together and put in order for housing before cold weather sets in.

GRAPE VINES, in houses to be forced very early, should be set to work the last of this month, or early next. If our directions have been attended to, all that will be necessary is to keep the houses moist and moderately aired, that the vines may break strong. The free use of water is of great importance at this early season, to counteract our dry summer heat. Vines in greenhouses will now have their crop ripe, and will need no further care till later in the season, other than stopping laterals and securing good, well ripened wood. Vines in cold houses will soon begin to color their crop, and a good temperature may be kept up, till they begin to change, when air should be more freely given. Top all laterals in season. Shoulder up the large bunches, and keep the spurs securely tied to the trellis.

PEACH TREES in pots, when the fruit is gathered, should not be watered too freely.

STRAWBERRY BEDS may be made now: first prepare the ground well, by trenching and a good heavy coat of manure; plant in rows two and a half feet apart. Old beds should have the runners laid in or cut off, according to the mode of culture.

PEAR TREES should still be summer pruned. Continue to take off all superfluous shoots to two or three buds, according to the strength. Trees

bearing large crops should be carefully thinned if large specimens are wanted.

BUDDING should be done this month.

INSECTS should be looked after. The autumn caterpillar is usually troublesome this month.

FLOWER DEPARTMENT.

As autumn approaches, the labors of the gardener increase, and with it the cares which, earlier in the season, are less important. Now there is no time to be lost; plants of many kinds, not already well advanced, will be of little or no use for winter decoration, but must go over to another year. There is time, however, yet to do a great deal. Seeds are to be sown, plants propagated, and specimens potted, which will keep all the spare moments well employed. The houses, too, should now be looked after, and repaired and put in good order for the coming winter.

CAMELIAS may now be repotted if they need it. Keep them well syringed every other day.

AZALEAS should be attended to; if well set with flower buds they may be rather freely watered. Syringe often.

PELARGONIUMS, headed down, should be kept rather dry till they break well, and by the latter part of the month may be repotted. Look after the cuttings.

CHRYSANTHEMUMS should be topped for the last time now. Water liberally, and shift if the plants require it.

CALLAS should be repotted and well watered this month.

CHINESE PRIMROSES may now be propagated from cuttings. Seeds may also be planted of the single kinds.

JAPAN LILIES, done blooming, may be removed to the open air.

SEEDS OF MIGNONETTE should be sown.

MONTHLY CARNATIONS, layered some time ago, may now be potted for winter blooming.

ACHIMENES, planted late, may have another shift into larger pots.

FUCHSIAS, intended for large specimens, may be repotted.

VERBENAS, for winter blooming, should be repotted and plunged in a frame.

VARIOUS PLANTS for winter blooming will need a shift as soon as the pots are full of roots.

FLOWER GARDEN AND SHRUBBERY.

HOLLYHOCK SEED may be planted now.

CARNATIONS AND PICOETES should be layered immediately.

ROSES should be layered.

WHITE LILIES may be taken up this month.

NEAPOLITAN VIOLETS should be well watered in dry weather.

BLUE BELLS, and other biennial flower seeds, may still be sown.

DAHLIAS should be well staked to prevent injury by the wind. Prune away all superfluous shoots, and water in dry weather.

THE AMERICAN GARDEN.

To some of our countrymen who are not familiar with this term,—though we believe it to be generally understood,—it may not be unimportant to remark that the American garden is a peculiar feature of the higher cultivated and embellished English gardens and grounds, and is devoted mostly to the growth of American plants which require a peaty earth, such as the *Rhododendron*, *Kalmia*, *Andromeda*, *Rhodora*, *Azalea*, *Epigæa*, *Vaccinium*, *Ledum*, *Linnæa*, &c. &c., and their allied species and hybrids, together with heaths, and some other natives and exotics, which require similar soil and treatment. Until the American *Rhododendrons*, *Kalmias* and *Azaleas* were introduced, there was no such thing as the American garden; but the magnificence of these with us neglected natives was so great, that no efforts were spared to bloom them well; and when it was ascertained that they could not be made to flourish under the ordinary treatment of other shrubs, but must have a peculiar loose and soft earth for their delicate, hair-like roots to penetrate, the term American garden was applied to the spot selected for these plants. Here, when the soil was properly prepared, they flowered in more than native luxuriance, and became the most attractive of all the beautiful shrubs collected from the temperate climes of the entire globe.

In some demesnes the *Rhododendron* and *Azalea* were planted to the exclusion of almost everything else. Highclere Castle, the seat of the Earl of Carnarvon, has a world-wide reputation for its American plants. It was here, upwards of thirty years ago, that the gardener, Mr. Carton, commenced hybridizing the American with the Indian species, and laid the foundation of the now magnificent hardy varieties which possess the brilliancy of the arboreum tribe with the hardiness of our native kinds. On this estate there are now miles and miles of drives faced with *Rhododendrons*. The American garden proper surrounds the house, and contains sixteen

acres, and was originally clay upon chalk. The entire natural soil was removed to the depth of eighteen inches, and replaced with peat. Here, disposed in circular, oval, and curvilinear groups, on grass, are Magnolias twenty feet high, Rhododendrons fifteen to twenty feet, and Azaleas ten to twelve feet. When in bloom, they load the air with their delicious breath, and thousands upon thousands of blossoms, in unbroken masses of color, form a scene which can only be seen to be appreciated.

At other places the American garden, though on a less extensive scale, forms *the* peculiar attraction of the grounds; but perhaps there is none equalling that of the nursery grounds of the Messrs. Waterer, of Knap Hill, where the soil is a fine natural peat, just suited to the plants. Here they grow with a vigor and brilliancy of foliage unsurpassed. The eye extends over acres upon acres of Rhododendrons and Azaleas, with flowers of every conceivable hue, the plants being grown as bushes, pyramids and standards, the latter with stems eight feet high, and heads twenty feet in diameter. Though we only saw them in the autumn, we could well imagine how brilliant would be the scene in

"The lovely season atwixt June and May,
Half pranked with spring, with summer half imbrowned,"

when these shrubs display their great heads of delicate as well as dazzling tints. A writer, in describing these gardens at the season of blooming, says that nothing ever gave him so much the idea of Paradise, or the gardens of the Peris, as the American nursery at Knap Hill, where the variety and vast size of the Rhododendron, the dense thickets and hedges of Azaleas, the endless variety of color, the delicious fragrance, the songs of the nightingales which sought shelter among them, and the fine order and keeping of the whole, left a more poetical impression of enchantment on his fancy than the princely Chatsworth or the gay Chiswick produced on him. To Messrs. Waterer are all lovers of American plants more indebted than to all other cultivators, for it was here that the present hybrid varieties of Rhododendron and Azalea which stand our climate were produced.

These are the plants which, *par excellence*, belong to the

American garden ; a feature which we yet in our own country, with very few exceptions, know nothing of, unless we visit the localities where the *Rhododendron* and *Kalmia* grow in their native luxuriance, seen by few and unknown by the many. So little do we prize our native shrubs, that we wait till they have the stamp of foreign approval before we begin to introduce them in and around our gardens. That there are difficulties in the way of growing them readily, unless the right course is pursued, is well known, and it is therefore with the hope of giving some aid in their behalf that we now offer some hints, by well known writers, as to the best means of accomplishing this work. Our article is penned for this purpose more than to show the claims of the so-called American plants upon our notice, for, when once seen, they need no other appeal to arrest at once our attention, and become favorites of all who admire rich verdure, and brilliant and fragrant blossoms.

First, then, to grow successfully all the *Rhododendrons*, *Azaleas*, *Kalmias*, &c., it is absolutely necessary that a loose, friable soil should be selected, or, if such a one cannot be found, it must be artificially made, bearing in mind that a clayey or calcareous soil is unsuited to their growth, and that they will, sooner or later, become sickly if planted in such a soil. Peat, or heath soil properly so called, is a very scarce article, and as difficult to procure, if not more so, than in England, where there are spots, where the heather grows naturally, which abound with it. But we have in our country, in abundance, what will answer equally as well, BOG SOIL and SAND. With these, and the refuse of the garden, such as clippings of hedges, small brush, &c., well rotted down, a soil may be made which will grow all the American plants in great perfection.

The natural soil, if clayey or calcareous, must be removed to the depth of at least eighteen inches, and replaced with a mixture of this bog soil, sand, and refuse of the garden, in the proportion of about one third of each. If the soil is loamy, a portion only of the loam may be removed ; and if very sandy, a still less quantity may be taken away, for these plants do very well in a sandy loam, though they do not remain in perfection of bloom near so long.

The present is the season for preparing ground for planting in the spring, and, if the directions are followed which are laid down in the extract below, or as we have advised, the plants may be set out next April or May, and they will grow with the greatest vigor and soon attain a large size. Let it not be forgotten that the soil must be loose, sandy, deep, and moist, and then these elegant plants will thrive and bloom with a luxuriance and perfection unknown under the usual treatment in ordinary soils.

In a suitable soil, the *Rhododendron* and *Azalea* transplant more readily than any other shrubs; they may indeed be removed at almost any season of the year. The soil adheres to their hair-like roots, and they remove with a good ball, and are sure to grow. There is not so much risk attending their removal as any other plants, and they flower just as well afterwards. This, added to the facility with which they may be cultivated when once the soil is prepared, gives them additional value. Our only wish is to see these beautiful plants introduced into every garden:—

While the chemist is consulted as to the ingredients required in the soil of a garden, and some mysterious power is attached by the uneducated to analysis, and its calcareous, siliceous, argillaceous, phosphoric, ferruginous, or other fine sounding results, it too often happens that attention is withdrawn from what is far more important, the mechanical condition of the earth and the consequences dependent thereon. Without calling in question, in any degree whatsoever, the scientific value which attaches to the admirable labors of the chemist, we may venture to observe that to gardeners their practical importance has at present a very limited application. It may be said indeed that they explain the reason of existing practice rather than point to new and improved means of cultivation. For example, gardeners have always known that hard water is injurious to certain kinds of plants; that was notorious before Davy or Liebig were heard of; the chemist shows that hard water is injurious because of the lime it contains; he therefore in this case does not improve practice, he only explains it. We all know that coarse rank offensive

manure is the delight of cabbages ; the chemist tells us that we there see the effect of sulphurous compounds when applied to plants that naturally abound in sulphur ; this is solid information, no doubt, but it does not touch practice. Bones in fragments are the *bonne bouche* of all roots ; the peasant who saw them clinging and insinuating themselves into a mutton bone may have found out that ; when the chemist says that it is phosphoric acid which roots extract, he points to a very curious fact, but he adds nothing to practice. It is only when he tells us how to form artificially that vegetable food or manure which nature supplies too sparingly for the wants of man that the influences of chemistry upon gardening is really felt.

In nothing has this been more strikingly manifested than in the cultivation of American plants, for which peat earth still remains the most approved kind of soil. The growth of these plants has reached a point of such importance that peat is becoming exhausted, even in places that naturally produce it ; while to very large districts it is absolutely denied by nature. Practical men have indeed invented certain composts (compositions) which answer a similar purpose ; and they also know that some kinds of natural peat are far better than others ; but to this they have been led by their own experience, not by the suggestions of the chemist, who has not even succeeded in explaining the way in which this substance operates upon the plants that grow in it. It is true he has shown that the unfitness for plants of peat from bogs is probably owing to the free acetic acid and tannin which that substance contains, and that it will only form suitable soil after exposure to the air till the acid is neutralized and the tannin decomposed. But every old gardener knew, before this explanation was offered, that peat from bogs must be thoroughly rotted down before use, which is saying, in horticultural phrase, what the chemist says in terms of science.

To us it appears certain that vegetable physiology must be called to the assistance of the gardener if he is to learn how peat earth really acts, and consequently how to invent a substitute. On former occasions attention has been drawn to this matter, and the appearance of a very nice sound practical

work on American plants, by Mr. Wm. Paul, the experienced nurseryman at Cheshunt, induces us to return to the subject. "Gardening," he truly observes, "has happily passed that era when the most trifling obstacles were magnified till molehills became mountains, the mountains an excuse for labor, or a cover for ignorance. In no art, perhaps, have greater strides been made in recent times than in the art of gardening. The darkness, once impenetrable, has well nigh disappeared. Even the dim mists in which so many objects are but indistinctly seen are daily waxing fainter; empiricism is settling into science, by the sure and steady process of induction. In many places the component parts of peat exist in a separate state. Sand, decayed leaves, turf, old tan, and any thoroughly decayed vegetable substances, may be so combined as to produce a soil in which American plants thrive perfectly. If the leaves can be obtained from the ditches and hedge-rows already decomposed, it saves the trouble of collecting and fermenting them, and they may be mixed at once with equal portions of chopped turf and sand. Or they may be raked together in autumn, and laid in heaps for twelve months, until thoroughly decayed, adding to the heap, from time to time, any garden refuse that will rapidly decompose. We believe the only condition necessary for the successful cultivation of American plants is a soil that is loose and light, containing sufficient vegetable matter to preserve a due and equable amount of moisture."

No doubt these are the conditions—looseness and dampness—to which, as Mr. Paul states elsewhere, absence of calcareous matter, which American plants cannot bear, must be added. Their dislike to lime is unexplained; all we know is that they will not thrive in its presence. Otherwise all their peculiarities seem to depend upon the fine fibrous state of their roots.

The roots of a *Rhododendron* consist, when young and active, of excessively delicate fibres, which run among the soil, merely passing through sand and earthy matter, but burrowing in every direction into fragments of decaying leaves or particles of rotten vegetable substances. This may be easily seen when the young fibres of a *Rhododendron* are very care-

fully washed and examined in water. Some precaution is, however, necessary in order to observe this, because of the excessive delicacy and brittleness of the fibres. When viewed with a microscope each fibre is found to be coated with an extremely fragile skin, not producing feeders as is the case in so many other instances, but composed of rather large transparent convex cells, which are detached from each other by the least violence. Nothing more delicate is known among perfect plants than this remarkable skin, through which the plant has to imbibe its food. By degrees it becomes brown, as the fibres thicken with age, and ultimately in the old roots it loses altogether its transparency and power of absorption, that is to say, of feeding. Now it is physically impossible for feeble roots thus formed to find their way through hard matter; therefore what is soft and easily penetrated is indispensable. Nor can they preserve their vital power if exposed to dryness; their unusual thinness and delicacy renders them incapable of detaining moisture; once really dried up, which must readily happen, they wither irrecoverably; therefore soil must remain damp, by which term wetness is by no means to be understood. Moreover it is evident that they pierce small fragments of decayed vegetable matter, in search of the food that collects in such places; therefore soil should abound in such fragments.

We believe then that if the soil for *Rhododendrons* is soft, damp, and rich in particles of decayed vegetation, it is wholly immaterial how it is composed, so that it is not calcareous. Dampness most especially is indispensable. Upon this point we again quote Mr. Paul:—"But while the surface soil is of the first importance in the culture of American plants, the nature of the subsoil is not altogether a matter of indifference. We have seen all that is really valuable for ornamental purposes flourishing in a light sandy loam not more than eighteen inches deep, resting on a *bed of clay*, while in a similar soil, resting on *gravel*, their progress was anything but satisfactory. The reason is obvious. In the first instance (clayey subsoil), while the surface soil allowed the moisture to pass among the roots, it was retained in close proximity below, and given upwards in case of drought, thereby maintaining the necessary

conditions of coolness and moisture, the extremes of stagnation and rapid evaporation being equally avoided; while in the other case (gravelly subsoil), the moisture passed rapidly away, and the delicate, hair-like roots suffered from exhaustion in dry weather. Had the surface soil been deeper in this latter case, or more retentive of moisture, the subsoil would have been a matter of little moment."

To the mixture suggested by Mr. Paul, as above quoted, we have nothing to object, except the use of old tan. That substance would be a dangerous ingredient unless thoroughly rotten, which it seldom is in gardens. What we should recommend instead is finely-sifted burnt clay, containing an abundance of the charred fragments of brushwood, weeds, leaves, tan, or any other soft material. Rotten sticks are so apt to mildew roots that their use is to be carefully avoided; reduced to charcoal no mildew can live upon them. This, with the addition of any reasonable quantity of cow-dung, (which for a year at least has been lying in a heap), will form a compost for American plants as good as the finest peat in the world, to the preparation of which a knowledge of vegetable chemistry is entirely unnecessary.—(*Gard. Chron.*)

THE ODORS OF VEGETATION.

BY WILSON FLAGG.

THE sense of smell is not included by philosophers in the rank of the intellectual senses. It seems chiefly designed to serve the purpose of directing animals to the right selection of their food, causing them to choose those substances which are of an agreeable odor, and to reject the opposite. This instinct is an unerring guide to the inferior animals, among the unaltered productions of nature, and probably is so to man in an uncivilized state. But art is so ingenious in imparting the flavor of one substance which is wholesome and agreeable, to another which is unwholesome and disagreeable, that the sense of smell, even when assisted by taste, is not a sure guide, among artificial preparations, to the useful and

the salutary. But among natural productions, unmodified by art, we are sure to find all those fruits and seeds, that possess an agreeable odor, to be agreeable and wholesome articles of food.

It is not my object, at present however, to discuss this point physiologically, but to treat of the odors of vegetation, chiefly as they affect our senses, when we are either rambling in the fields or engaged in rural occupations. Every wood and every meadow has its characteristic odors. Those of an oak wood are perfectly unique, and could not be mistaken for any others. They are not aromatic, but possess a freshness that is, perhaps, more agreeable than a spicy fragrance. This odor is very similar to that of the timber when it is cut or sawed, and is probably the same that guides wild animals to the acorn. It comes chiefly from the foliage, after it has dropped from the trees; for the blossoms and the green leaves of the oak do not emit a very perceptible odor.

In those wet grounds which are frequented by the alder I have always observed a peculiar and very agreeable fragrance in the air, but have not ascertained whether it comes from the alder bushes, or from other plants that grow in the same situations. But as a certain gummy substance is found upon the surface of the leaves of the alder, it is not unlikely that this gum is the concentration of an essential oil that produces the aroma. In similar places we find the swamp honeysuckle, in flower during June and July, and the Clethra, that blossoms in the latter part of August. Of these, the latter gives out a very diffusive odor from its flowers, and the former both from its flowers and foliage. The fragrance of all these shrubs, also that of the Dutch myrtle, is wafted, in combination with the odor of water-lilies, over the surface of those ponds that still retain upon their banks their primitive vegetation. In this mixture we perceive the characteristic savor of the swamps when covered with their native plants.

As we emerge from the lowlands and come to the hillside, where the native grape is abundant, we are greeted by another class of odors, still more sweet than the former. This is the odor of grape vines, resembling that of mignonette, and most perceptible when they are in flower. It is said to be more

remarkable in the American grape blossom than in that of the foreign species. It differs not materially from the perfume of a strawberry plat. Very little of it remains after the blossom is gone, but it is always more or less perceptible in the fruit and foliage. The odors from the foliage of any plant are slightly different from those of the flowers, where both are fragrant. This difference is exemplified by comparison of the scent of the sweet briar with that of the rose. All rose bushes that have thorns give out a similar scent in an inferior degree.

The odors of the seasons are due chiefly to flowers in spring and early summer, to the leaves of vegetation in the latter summer, and to the ripened crops and withered leaves in autumn. Winter is without odors, except in the forest. The first noticeable perfumery that pervades the atmosphere in spring is that of willows and poplars, which are, however, very distinct, the former being a sort of lilac odor, the latter a balsamic and stimulating odor,—the one coming from the expanded flowers, the other from the scales of the opening buds. From these two kinds of trees, proceed most of the odors which are characteristic of spring; but as spring advances and the orchard trees come into bloom, the atmospheric odors are somewhat modified, but not essentially changed.

The flowering of the lindens succeeds that of the orchards; and, in tracts in which this species of forest tree is abundant, their fragrance seems universal, and it is surpassed by that of no other forest tree when in flower. The blossom of the linden is as full of honey as of fragrance, and is attractive beyond most other flowers, not only to bees but to other honey-eating insects. Indeed, flowers that produce honey are particularly odoriferous, for the purpose of attracting the insect to the flower, to which it renders an important service. I have never perceived any remarkable fragrance in the flowers of the elm or the maple, nor in the flowers of the amentaceous trees, except those of the poplar or willow. I believe it will be found that cattle are most addicted to browsing upon those trees that bear odorous flowers. I have not observed how they regard the lime.

The characteristic fragrance of summer is the smell of new-mown hay. This is indeed "the balm of a thousand flowers," for, though the greater part of the aroma may be attributable to clover and sweet-scented vernal grass, yet the whole is the grateful result of many different species of herbs that are cut down by the mower. Almost any combination of healthful herbs, when spread out to the sun and wind, would produce a fragrance resembling that of new-mown hay. If there be combined with these any of those herbs which are not acceptable to cattle, there proceeds from the mixture a rank, herbaceous smell that indicates their presence. This is plainly perceptible from the ferns, which are mixed with grasses cut from a natural meadow.

To the smell of new-mown hay succeeds that of the grain harvest, which is really the fragrance of ripened vegetation; and it marks the difference in the scent of herbs when cut down in the blossom, and when cut down after they have ripened their seeds. The smell of grass is not the same when it is green and after it has become yellow with maturity; the one suggests the idea of summer, the other of autumn and the harvest. The only small herbs, except clover and the grasses, that extend over sufficient surface to communicate their character to the atmosphere, are the penny-royal and the common sweet everlasting. The scent of either of these plants is very manifest on a still warm day in September, over those fields in which they are abundant.

It is a curious fact that certain agreeable plants give out a little of the odor of disagreeable objects. Thus, the ripened fruit of the quince has a perceptible savor of onions; and the sweet everlasting, when crushed, has a smell that may be perceived in a clean and dry pig-pen. It is useless, however, to employ ourselves in tracing analogies of this kind.

The smell of a pine wood is well known to everybody, and it is perceptible at all seasons of the year,—on a still, mild winter day, no less than in spring and summer. We read of the fragrance of orange and myrtle groves; but I doubt whether a more pleasing fragrance is wafted on the gales of Araby than from a pine wood in America. Perhaps not every one is aware that the most agreeable and most perceptible

odors come from that species of pine which possesses the least beauty, the pitch pine,—the white pine being in this respect greatly inferior to it. Each species of the pine family is distinguished by its odor from every other; but in New England, the white and pitch pines only grow in sufficient abundance to communicate their characteristic odors to the atmosphere. The essential oil of spruce is considered more agreeable in pharmacy than that of the true pines, or the oil of turpentine; but the pine trees communicate a superior fragrance to the atmosphere, and one very different from that of the distilled oil of turpentine. The scent produced by a knot of white pine, when it is penetrated by the saw, cannot be distinguished from that of nutmegs.

Birch trees, though their bark, when crushed or wounded, gives out the fragrance of checkerberry, distil but very little of their essence into the atmosphere. The purpose it serves in the economy of nature is probably to defend it from certain kinds of borers, which might otherwise be injurious to its wood. The foliage of the hickories affects the air in a sensible degree at all times, and that of most of the trees is perceived after the fall of the leaf. But except the oak, the hard-wooded trees communicate less fragrance to the atmosphere than those which are soft-wooded, like the poplars, willows, pines, and their kindred species. It may be found that in proportion to the softness of the wood is nature placed under the necessity of protecting the wood and bark of trees from borers of different kinds, by creating an essential oil in their sap that shall be disagreeable or poisonous to the insect.

PEAR CULTURE IN OREGON TERRITORY.

BY A. F. DAVIDSON, SALEM, MARION CO., OREGON.

IN writing you, deem us not obtrusive, nor think we are impertinent or officious; for, we simply wish to exchange thoughts for mutual benefit; and, in doing so, you will at least confer a happiness.

We do not pretend to be able to impart knowledge to you,

of which you were ignorant before ; for, on the subject of fruit-growing, we look up to you as a father ; consequently you must look upon us as dutiful children, respecting age and wisdom, asking for that which, no doubt, it is a pleasure to give. Then gently to the point.

We have had many, very many, fruit trees killed this spring ; some were winter-killed, but more by the sun ; some by too late culture ; some by the cold rain ; by the snow and sleet ; by being too heavily manured ; and, finally, by late fall rains, which make the trees take a second growth. This is very injurious to trees in this country, where the summers are so dry. Those who dug deep holes, two and three feet deep, have quite a number of trees killed, the water standing in them, like tubs, soaking and rotting them to death ; the cold water softens them, turns them blue, corrodes the sap, poisons its circulation, and kills the tree. Where the ground is stony, gravelly or sandy, it will answer to dig deep holes ; but not in our compact subsoil and wet climate. The holes are no disadvantage in summer ; it is the soakage during winter and early spring that does the damage. On our hilly land holes are less injurious ; an orchard is, however, better without them. We only need deep ploughing ; and in this wet land, I mean rainy country, the trees should be set on the surface, and plough to them.

Had I another orchard to set out, I would plough the land twenty inches deep, thirty-six feet wide in rows, setting the trees on the lap of the furrows, of yearlings only, and cut them back to within one foot of the ground ; of hardy, long keepers, the best only ; cultivate early in the season, never late ; keep them in symmetrical shape by pinching or finger-pruning ; make them bushes, strong and limby ; manuring with rotten wood, lime, ashes, and a moderate share of concentrated manure ; set on high, dry land, of those kinds only that are best adapted to the soil you have.

These are the most valuable points I have been able to glean from ten years nearly of untiring perseverance and experience in our soil, climate, culture, &c. ; and I have proved every word by hard-earned and dear-bought experience, for had I have known ten years ago what I have here

stated, I should have been worth twenty-five thousand dollars more than I now am. I have set out three orchards; the first one was a total failure, a heavy loss; the second was a partial success; the third, complete success rewarded my efforts. I however want to set out one more, based wholly on my experimental knowledge. I think I could set out and make an orchard that would astonish the world; for I have studied our climate, soil, the proper method of setting, of cultivation, kinds, and their adaptation to our climate and soil. And let it be borne in mind that the climate and soil of Oregon are totally different from that of any part of the United States. A man who understood well how to grow fruit trees in the States, would fail here. Why? Because, the soil, climate, manner of growing, manuring, cultivation, &c., are not such as he has been used to. Hence I failed, and many others failed in the beginning, but, by long practice, have come out right in the end.

The books are not of much benefit to us in this country; if we should manure, prune and cultivate as they direct, we should kill two thirds of our trees; and hundreds have ruined their orchards by following the books. I have read with pleasure, and even profit, Downing, Barry, Thomas, and Elliott. Downing's is the best; Barry's, good; Thomas', worthy of being read; Elliott, on first class apples and first class pears, is good; but, in the amateur and literary departments, he has failed, and I think his work will have to be remodelled to become a standard work.

Those apples that are best with us are—the Wine Sap, White Winter Pearmain, Hubbardston Nonsuch, Northern Spy, Yellow Newtown Pippin, Baldwin, and Esopus Spitzenberg. These apples sell well, eat well, cook well, keep well, grow well, are hardy and profitable, except the Newtown Pippin and Esopus Spitzenberg, which two are shy bearers, but most magnificent apples. The best summer apples are Early Harvest, Red and Sweet June, and Early Bough; of fall, are Rambo, Gravenstein, Red Astrachan, Fall Pippin, and Golden Sweet. There are many others highly esteemed and much propagated; still, those we have mentioned keep the first place.

PEAR CULTURE IN ILLINOIS—VALUE OF UNDERDRAINING.

BY DR. J. A. KINNICOTT, WEST NORTHFIELD, ILL.

I rather like your last leader, on "Dwarf Pear Culture," though, sooth to say, my personal experience with pear growing—and I may add observation, this side of Boston—is too much like my old Buffalo friend's. Indeed, I believe I had a part of that very lot of *dwarfs* mentioned by Mr. Allen in his first article in the Horticulturist; and of some hundred or more, planted then, only *three* are alive now—all one variety, a late pear, name uncertain, but a pretty fair bearer. With us, dwarfs have not suffered much worse than standards, I think, though sorts on pear stocks have borne the most fruit in proportion to age and size.

I have, perhaps, had thirty varieties on quince, (too many,) and say three hundred or more specimens planted out, within the last eighteen years. Of these, thirty may be living now, and half of them without injury. In the nursery, we have lost them by the thousand—principally from *wet feet* and *frost*—the stock killing oftener than the bud, the first and second years—after that, the top has both winter-killed and blighted; and the same sorts, on the pear stock, have been found equally tender in like soil. A few varieties seem hardy here in reasonably dry situations. In fact, all the specimens now living, and like to live, stand on our few naturally dry or underdrained flats. And even more than climate, or the other properties of soil, I now believe in the influence of *underdrainage* for nearly all fruits, and more especially the pear. And then the pear needs a stiffer as well as dryer soil than it finds in most of our Western prairies; and there are localities, even in Illinois, where this fruit succeeds quite well enough, the blight of summer being its only great enemy, and that disease does not spare the apple any more than the pear. You perhaps remember my son Charles; he is now helping to establish the "Central Egyptian Nurseries," near Odin, on the Chicago branch of the Central Railroad, Marion Co. I think you passed the place when here—the "crossing" of the St. Louis and Cincinnati line. Well, there are old pear trees

there, nearly as large as those on the Detroit River, in Michigan, and they bear large crops of fair, though not very good, fruit. And some of our miserable remnants, planted there, take to the soil as though they knew the difference, and grow off like "natives," and promise to bear like blackberries. And, by the way, Southern Illinois beats the world,—and New Rochelle too,—in that best of native fruits.

Of the sorts of pears that have withstood every enemy in our grounds, I name Buffum as the most certain. It has never "blighted," or lost a twig by frost, and though long in coming to bearing, it has never failed of a good crop of very good fruit. I may say about the same for Fondante d'Autonne, (Belle Lucrative,) and, in hardiness and fruitfulness, the tolerably good old Bon Chrétien Fondante comes into the same category. Flemish Beauty is another of our escaping sorts, and our best bearer, perhaps. Beurré Diel has also escaped, and borne well for two seasons. Dearborn's Seedling blighted some, but has borne well; Swan's Orange about the same. Seckel has not blighted much, but nursery trees have appeared tender; the fruit is fair here.

These are all standards. On the quince, perhaps Forelle has stood as well, and borne as much, as any of the living specimens; I don't think much of the fruit, however. I never yet got the Duchesse d'Angouleme to bear, though I had large trees of it killed down to near the ground, two years ago. But let me tell you, that within ten miles of me, near the Lake, the Duchess has done pretty well in the fruiting line. And here is the point. *Locality*, as much as culture, governs failure and success. Composition of soil, and its condition in respect to standing water—all the phases of climate, and even the slight differences in accidental protection—altitude, aspect, &c., incident to localities in the same region, affect success in pear-growing more than most of us suspect. And from an old man, of much sad and expensive experience in attempts to grow pears, you may the more readily accept the prediction I now venture to make, that, within the next decade, it will be abundantly proved, that some varieties of the pear can be grown in certain portions of Illinois as well as about Boston. The "blight," as I

before said, is the only universal enemy, and that is by no means constant to locality, variety, or season; and the right sort, in the right soil and climate, with the right training and cultivation, is just as like to succeed here as there. But when we cannot choose our soil and climate, we must find varieties adapted to our region, and supply, by art, the defects of drainage, and the special wants of this best of all the large fruits of a temperate climate.

But you see I have given you one of my old letters. No matter, it is about done. You have heard of our early, dry spring, and the late, wet and cold end to it, stretching far into June. Well, our glorious show of fruit blossoms has proved mainly abortive, and our grain fields are red with rust, when they should be golden with the coming harvest. Oats are rusted worse than wheat, and the potato is stunted in its hard beaten bed; while corn, that many thought most likely to fail, is coming on like fire-weeds in a burnt clearing.

It is refreshing to hear again from our old correspondent, whose silence, for so long a time, our readers as well as ourselves much regret. It gives us pleasure to know that our article on dwarf pears should awaken anew his interest in pear culture, and call forth so much good advice in so few words. It is indeed the "expensive experience" of eighteen years of an active man's life devoted to horticulture, by no means so old yet but what we hope and trust he may continue to enrich the horticultural world with additional experience, based upon that which has passed, and thus be doubly valuable to cultivators in the great West.

Taken in connection with Mr. Davidson's article on Pear Culture in Oregon, in another page, the conclusion is evident that all success in the growth of this fine fruit depends mainly upon one thing, viz., UNDERDRAINING. There are, in truth, "phases of climate," "slight differences in accidental protection," "altitude, aspect," &c., which qualify this, but the grand and fatal error to be avoided in successful pear culture is a wet and cold subsoil, where the roots are sodden throughout the winter. In all soils and localities subject to this, the first work is to underdrain. We have in our articles on pear

growing repeatedly advocated a deep, mellow, underdrained soil as all important in the culture of the pear.

The blight is a terrible enemy to pear culture; but aside from this, we have no doubt, with proper treatment, pears can be grown abundantly in Illinois. All kinds may not succeed; some of the higher bred and choice sorts may resist the exposure and harshness of the unsheltered prairie; but where these will not do, there are others which will, and till this is well ascertained, it will be advisable to select the vigorous and hardy kinds, which bear abundantly, even if they are not of the highest character, trusting to time and experience to ascertain and introduce such as now appear to resist the influences of climate and cultivation.

Though Dr. Kinnicott has not been so successful with dwarf pears as his friends around Boston, the fact that "dwarfs have not suffered much worse than standards" in Illinois, shows that it is no fault of the *stock*, but rather of soil, climate, frost, &c. During the cold winter of 1856-7 we lost five times as many trees on the pear stock as we ever lost on the quince.

A great many circumstances might combine to prevent success—such as poor trees, unprepared ground, unusually severe frosts before the trees are established, want of manure, &c. The success of the Doctor cannot certainly be called very good—that only thirty out of three hundred trees should live and thrive. This is quite unlike our own, for, out of hundreds of dwarf trees set out at various times since 1842, we have never lost *twenty-five*—and such as did not survive was mainly owing to unsuitableness of the stock. A great portion of these trees are now ten to twenty feet high, and loaded with fruit from bottom to top; it would give us great pleasure to show them to all who doubt the advantages of dwarf pear growing.

We think, therefore, that our Western fruit-growers should be encouraged in dwarf pear culture, whenever they can give them good treatment and due care. For the orchard, the quince stock is unsuitable, and impatient of the careless culture they generally receive.

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POMOLOGICAL GOSSIP.

POMOLOGICAL CONGRESS OF LYONS, FRANCE.—The establishment of Pomological Societies by our pomologists has not been without its effect abroad. In various departments of France pomological meetings have been held, and the numerous pears under cultivation have been submitted for examination. We have now before us, the report of the Pomological Congress held at Lyons in the fall of 1856, published in the *Revue Horticole*, with a list of the varieties admitted, and though all of the kinds are well known here, and many of them already recommended for general cultivation by the American Pomological Society at its several sessions, it may be interesting to learn in what estimation the French pomologists hold the newer kinds whose cultivation has not yet been sufficiently extended to enable our pomologists in various parts of the country to pronounce upon their merits. At the same time it will afford our amateur cultivators an opportunity to obtain additional information in regard to many of these new kinds, which may induce them to add them to their collections.

We give the names and synonyms as they are reported, the first being considered by the Congress at Lyons the legitimate name. In some cases these names are not the same as those established by the American Pomological Society, or such as obtain in general; and the synonyms in some instances are not correct according to our experience. We shall note them as we proceed with the list. The *synonyms* are in brackets.

ADELE DE SAINT DENIS.—[Adele de Saint Ceras, Baronne de Mello.]—Productive; medium size; October. [This is known in American collections as the Baronne de Mello. Beurré Van Mons of the Hartford collections is the same.]

ALEXANDRE DOUILLARD.—[Douillard.]—Very productive; very large; good; November.

ARBRE COURBE.—[Amiral.]—Productive; large; good; October.

BEAU PRESENT D'ARTOIS.—[Present Royal de Naples.]—Very productive; large; very good; commencement of September.

BERGAMOT D'ANGLETERRE.—[Gansel's Bergamot, Bezi de Caissoy, of several nurseries.]—Productive; medium size; good; September and October. (Grafted on pear.)

BERGAMOT ESPERIN.—Very productive; medium size; very good; March to May.

BEURRE' BEAUMONT.—[Beurré de Beaumont, Bezy Waët, Bezy de Saint West, Belmont, Beymont.]—Productive; medium size; good; January. [The Bezy Waet is the proper name; Belmont is one of Mr. Knight's pears.]

BEURRE' BENOIT.—[Beurré Auguste Benoit or Benoist.]—Productive; large or very large; very good; September and October.

BEURRE' BRETONNEAU.—[Calebasse d'hiver.]—Productive; very large; very good; February and March. (Grafted on pear; very good for cooking.)

BEURRE' CAPIAUMONT.—[Beurré Aurore.]—Very productive; medium size; good; October. (Grafted upon pear; very good for cooking.)

BEURRE' CLAIRGEAU.—Very productive; large or very large; good; November and December.

BEURRE' D'AMANLIS.—[Beurré d'Amanlis panaché, Wilhelmine, Hubard, Duchesse de Brabant, Poire Delbert or d'Albert, Poire Kessoise.]—Very productive; large; September.

BEURRE' D'AREMBERG.—[Orpheline d'Enghein, Colmar Deschamps, Beurré Deschamps, Beurré des Orphelins, Delices des Orphelins.]—Very productive; medium size; very good; December to January. (Grafted on pear.)

BEURRE' D'ANJOU.—[Ne Plus Meuris, Nec plus Meuris.]—Not very productive; very large; very good; December.

BEURRE' DAVY.—[Beurré Spence, Beurré de Burgoyne, Beurré Saint-Amour, Belle de Flandre or des Flandres, Nouvelle gagnée a Heuze, Beurré des Bois, Fondant des Bois, Boss Père, Poire des Bois, Boss Pear, Beurré d'Elberg, Beurré Davis, Beurré Foidart.]—Very productive; large or very large; good; October. [The extent of the information of the French cultivators in regard to pomology in America may be learned from this, which is nothing more than the FLEMISH BEAUTY.]

BEURRE' DE NANTES.—[Beurré Nantais.]—Very productive; medium size; September.

BEURRE' D'HARDENPONT.—[Beurré d'Arenberg erroneously, Glout Morceau, Goula Morceau de Cambron, Beurré de Kent, Beurré Lombard, Beurré de Cambronne.]—Productive; large; very good; January.

BEURRE' DIEU.—[Beurré Magnifique, Beurré Incomparable, Beurré Royal, Beurré des Trois Tours, Dry Toren, Melon de Kops, Poire Melon, Graciale d'hiver, Fourcroy, Dorotheé.] Productive; large; very good; November and December. (Recommended.)

BEURRE' GIFFART.—Productive; medium size; very good; end of July.

BEURRE' PICQUERY.—[Urbaniste, Louis Dupont, Beurré Drapiez, Louise d'Orleans, Serrurier d'Automne, Virgaline Musquée.]—Not very productive; medium size; very good; October, November. [Serrurier d'Automne is quite a distinct pear.]

BEURRE' QUETELET.—[Beurré Dumortier.]—Very productive; medium size; very good; September and October.

BEURRE' SIX.—Productive; very large or large; very good; November and December. (Grafted on pear.)

BEURRE' SUPERFIN.—Very productive; very large; very good; September. [So far this has not proved very productive with us.]

BEZY DE MONTIGNY.—[Not the Doyenné Musqué vulgarly called Bezy de Montigny.]—Very productive; medium size; good; September.

BON CHRE'TIEN NAPOLEON.—[Liard, Medaille, Mabile, Capitif de St. Helene, Charles d'Autriche, Chas. X., Beurré Napoleon, Bonaparte, Gloire de l'Empereur, Napoleon d'hiver.] Very productive; very large; very good; October, November.

BONCHRETIEN WILLIAM.—[Bartlett of Boston, de Lavault.] Very productive; large or very large; very good; September.

BONNE D'EZEE.—[Belle or Bonne des Zees, Belle et Bonne de Haies.]—Very productive; large; good; September.

CALEBASSE BOSCO.—[Thompson.]—Very productive; large; good; September. [This we presume is our Beurré Bosc; the Thompson is a distinct pear.]

CALEBASSE MONSTRE.—[Calebasse Carfaron, Calebasse Royal, Calebasse Monstreuse du Nord, Van Marum, Triomphe de

Hasselt.]—Very productive; very large; very good; October. (Grafted on pear.)

COLMAR D'AREMBERG.—[Kartoffel.]—Very productive; very large; very good; November.

CONSEILLER DE LA COUR.—[Marechal de Cour, Bô or Baud-de la Cour, Grosse Marie.]—Productive; very good; October.

CUMBERLAND.—Very productive; very large; good; September and October. [This is the Cumberland of Rhode Island.]

DES DEUX SŒURS.—Very productive; very large; very good; November.

DELICES D'HARDENPONT OF ANGERS.—[Poire Pomme, de Racqueingham.]—Very productive; medium size; very good; November, December.

DELICES DE LOUVENJOUL.—[Jules Bivort.]—Very productive; very large; very good; October, November. (Grafted on pear.)

DOYENNE' BOUSSOCK.—[Beurré de Merode, Double Philippe, Nouvelle Boussock.]—Productive; large; good; September.

DOYENNE' DEFAIS.—Productive; medium size; very good; November and December.

DOYENNE' D'HIVER.—[Bergamotte de la Pentecote, Seigneur d'hiver, Doyenné de or du Printemps, Dorotheé Royal, Poire Fourcroy, Canning d'hiver, Merveille de la Nature, Pastorale d'hiver, Poire du Pâtre, Beurré Roupé.]—Very productive; large; good; January to May. [This is our well known Easter Beurré.]

DUCHESSE D'ANGOULEME.—[Poiré de Penzenas, Des Eparonnais, Duchesse.]—Very productive; very large; good; October, November.

DUCHESSE PANACHE'.—Very productive; medium size; very good; end of August.

DUCHESSE DE BERRY D'ETE.—Very productive; medium size; very good; end of August.

EPINE DU MAS.—[Belle Epine Dumas, Colmar du lot, Duc de Bordeaux, Epine de Rochechouard, C. de Limoges.]—Productive; medium size; good; November.

ESPERINE.—Very productive; medium size; very good; October.

FIGUE.—[Figue d'Alencon, Figue d'hiver, Bonissime de la Sarthe.]—Productive ; very large ; very good ; November and December.

FONDANTE DE CHARNEUX.—[Beurré or Fondante de Charneux, Duc de Brabant, (Van Mons,) Miel de Waterloo.]—Productive ; very large ; very good ; October. Grafted on pear.

FONDANTE DE NOEL.—[Belle or Bonne de Noel, Belle or Bonne Apres Noel, Souvenir d'Esperin.]—Productive ; medium size ; good ; December.

GRAND SOLIEL.—Productive ; very large ; good ; December.

GRASLIN.—Productive ; large or very large ; good ; October, November.

JALOUSIE DE FONTENAY.—[Jalousie de Fontenay Vendee, Belle d'Esquermes.]—Very productive ; very large ; very good ; September.

LOUISE BONNE D'AVRANCHES.—[Louise de Jersey, Bonne or Beurré d'Avranches, Bergamot d'Avranches, Bonne de Longueval.]—Very productive ; very large ; very good ; September.

MARIE LOUISE DELCOURT.—[Marie Louise Nova, Marie Louise Nouvelle, Van Donkelear, Van Donckelaer, Marie Louise Van Mons.]—Very productive ; medium or very large ; very good ; October, November. [This is the Marie Louise.]

NOUVEAU POITEAU.—[Tombe de l'Amateur.]—Productive ; large ; good ; November. (Rots at the core before it becomes yellow.)

PASSE COLMAR.—[Passe Colmar gris, Passe Colmar Nouveau, Passe Colmar Ordinaire.]—Very productive ; medium size ; very good. December to February.

ROUSSELET D'AOUT.—[Gros Rousselet d'Aout, Van Mons.]—Very productive ; medium size ; very good ; August.

ST. MICHAEL ARCHANGE.—Productive ; very large ; very good ; October.

SAINT NICHOLAS.—[Duchesse d'Orleans.]—Very productive ; medium size ; very good ; September and October.

SEIGNEUR.—[Esperin, Seigneur d'Esperin, Bergamotte Fievue, Bergamot Lucrative, Lucrative, Bresiliere, Beurré Lucratif, Fondante d'Automne, Arbre Superbe.]—Very productive ; medium size ; very good ; September and October.

SHOBDEN COUNT.—[Not Shobden Court.]—Very productive; medium size; very good; January to March.

SOLDAT LABOUREUR.—Productive; very large; good; October to December.

SUZETTE DE BAVAY.—Very productive; small; good; February to April.

TRIOMPHE DE JODOIGNE.—Productive; large or very large; very good; December.

VAN MONS.—[Van Mons de Leon le Clerc.]—Productive; large; very good; November. Grafted on pear.

PEARS ESPECIALLY FOR ESPALIERS.

The following varieties of pears named are "recommended for espaliers." They are precisely the same sorts which in our climate cannot be grown with certainty as standards or dwarfs, thus establishing the fact that the climate of many parts of France is no better adapted to the pear than our own.

BERGAMOTTE CRASSANE.—[Cressanne, Cresane d'Automne, Beurré Plat.]—Productive; medium size; very good; November. (Against a wall to the south.)

BEURRE' GRIS.—[Beurré doré, Beurré d'Amboise, Beurré Roux, Beurré d'Isambert, Beurré du Roi, Isambert de Bon, B. de Terwerenne.]—Productive; medium to large; very good; September and October. (Against a wall, with a coping, facing east or west, can be grown as a standard.)

BEZY DE CHAUMONTEL.—[Beurré de Chaumontel, Chaumontel, Beurré d'hiver.]—Very productive; medium to large; very good; January. (Can also be grown as a tall pyramid.)

BONCHRE'TIEN DE RANCE.—[Beurré de Rance, Beurré de Flandre, Beurré Noirchain, Beurré Noire Chair, Hardenpont de Printemps, Beurré de Pentecote.]—Very productive; very large; very good; January to March. (Upon pear stock, against a wall, good exposure.)

DOYENNE' BLANC.—[Beurré Blanc by error, St. Michael Bonne Ente, Doyenné Picte, de Niede, du Seigneur, Citron de Septembre, etc.]—Very productive; medium size; very good; October. (Upon pear stock, against a wall, with a coping, facing north, east or west.)

DOYENNE GRIS.—[Doyenné Roux, Doyenné Crotte, Doyenné

galeux, D. Jaune, St. Michel gris, Neige gris.]—Very productive; medium size; very good; October and November. (Upon pear stock against a wall, with a coping; soil light, facing east, west or north.)

ST. GERMAIN D'HIVER.—[Inconnue Lafare, St. Germain gris, St. Germain Vert.]—Productive; very large; very good; November to March. (Against a wall to the south.)

VARIETIES FOR COOKING.

BELLE ANGEVINE.—[Angora, Bolivar, Comtesse ou Beauté de Terweren, Royal d'Angleterre, Duchesse de Berry d'Hiver, Abbé Mongein, tres grosse de Bruxelles.]—Very productive; enormously large; very good; end of winter. (Pyramid, better as an espalier against a wall, facing the south.) [This is our old Pound pear, or Uvedale's St. Germain, which has been brought out under so many new names during the last twenty years. Abbé Mongein in our collection is a *distinct* pear, with entirely different foliage.]

BON CHRÉTIEN D'HIVER.—[Poire d'angoisse, Poire de St. Martin, Bonchrétien de Tours.]—Very productive; large; good; March to May. (Against a wall with a good exposure.)

CATILLAC.—[Quenillat, Teton de Venus, Gros Gillot, Bon Chrétien d'Amiens, Grand Monarque, Monstreuse des Landes, Chartreuse, Abbé Mongein.]—Very productive; very large; very good; February, May. (Pyramid, better as an espalier and standard.)

CERTEAU D'AUTOMNE.—[Cuisse-Dame by error.]—Very productive; medium size; very good; October, November. (Best as an espalier and standard.)

CURE.—[Mons. Le Curé, de Monsieur, de Clio, Belle de Berry, Bell Andréanne ou Adrienne, Bon Papa, Pater noster, Vicar of Winkfield, Belle Heloise, Beurré Comice de Teulon, Belle Andreine.]—Productive; large; very good; November, January. (Pyramid, espalier and standard.)

LEON LE CLERC.—Productive; large; very good; March, May. Pyramid; better as an espalier; upon pear stock; good exposure.

MARTIN SEC.—[Rousselet d'hiver.]—Very productive; small; very good; December, January. (Best as a standard.)

MESSIRE JEAN.—[Mi-Sergent, Messire Jean gris, Messire Jean dore Chaulis.]—Very productive; medium size; good; November. (Best as a standard.)

PEARS SPECIALLY FOR STANDARDS FOR ORCHARDS.

BERGAMOTTE SYLVANGE.—[Poire Sylvange.]—Productive; medium size; good; November.

BEURRE' D'ANGLETERRE.—[Bec d'Oie, Amade, Poire d'Amade, Poire Anglaise, St. Francois, Poire de Finnois.]—Very productive; medium; very long; September. [The synonyms, Amade and Poire d'Amade, belong to another pear, according to pomologists.]

BEURRE' GOUBAULT.—Very productive; medium size; good; September. (Should be gathered before ripe.)

BEURRE' MILLET.—Very productive; small; very good; December.

BLANQUET.—[Blanquet gros, Cramoisin, Cramoisine.]—Productive; small; very good; July. (Gathered before ripe.)

CITRON DES CARMES.—[Petite Madeline, Saint Jean.]—Very productive; small; very good; July. (Gathered before ripe.)

COLMAR NELIS.—[Nelis d'hiver, Bonne or Fondante de Malines.]—Productive; medium size; good; November, December. [This is our Winter Nelis.]

DOYENNE' DE JUILLET.—[Roi Jolimont.]—Very productive; small; very good; July. (Gathered before ripe.) [This is the Doyenné d'Ete.]

EPARGNE.—[Beau Present, Cuisse Madame, Grosse Madeleine, Saint Sampson, Chopine, Beurré de Paris, Cueillette De la Table des Princes.]—Very productive; medium or large; good; July, August. (Succeeds as an espalier.) [This is the common or English Jargonelle.]

JOSEPHINE DE MALINES.—Not very productive; medium or small; very good; January. Succeeds as an espalier.

ROUSSELET DE RHEIMS.—[Petit Rousselet, Rousselet Musqué.]—Productive; small; good; September. (Very good for preserving.)

SECKLE.—[Shakespear, Seckle pear.]—Productive; small; good; October.

ZEPHIRIN GREGOIRE.—Very productive; small or medium; very good; January, February.

MATHEWS' ELIZA PEAR.—A new seedling pear, under this name, was exhibited at a meeting of the British Pomological Society in December last. It was raised by Mr. Mathews of Clapham. It was considered to be of the race of Easter Beurré, and was raised by his father-in-law, the late Mr. Groom. The fruit is very handsome, and will rank among the large pears. In shape it has much the appearance of White Doyenné, with the features of Easter Beurré about the stalk end, though not towards the eye. The skin, when ripe, is of a pale citron, or straw color, with the faintest tinge of green. The flesh has an orange-yellow tint, is quite melting, juicy and sugary, with a fine mixture of vinous acid, which gives it a refreshing and lively, piquant flavor. It was considered, and justly, a most excellent pear.

THE HEBRON PEAR.—This is the name of a new pear, which originated in the town of Hebron, Conn., where it has been cultivated in that and the neighboring towns, and is well known in the Hartford market. There are also several good sized trees growing in that city. For several years the Hebron has been exhibited before the Horticultural Society of Hartford, but as there was some little doubt in regard to its origin it was not sooner brought to notice. This doubt, however, has now been cleared up, and it is now called the Hebron pear. The fruit is below the medium size, obovate depressed pyriform; skin thin, smooth, yellow russet, thickly covered with obscure brown dots upon the parts least russeted; stem three quarters of an inch long, inserted obliquely in a moderate cavity; eye nearly closed in a very shallow basin; flesh melting, juicy, sweet, slightly musky, aromatic; ripe from July 20 to Aug. 10.

The tree is a thrifty grower, very pyramidal, productive; bears annually. The fruit should be gathered and ripened in the fruit room.

SEEDLING APRICOT.—Mr. J. Van Deventer, of Princeton, N. J., sent us some very handsome apricots, which were gathered from a tree he believes to be a seedling originated in Princeton. It was known more than fifty years ago, but not cultivated to any extent, and never disseminated that he could learn. It is not described in any of the books, nor has

he ever seen a specimen of the fruit elsewhere. Mr. Van Deventer writes us as follows:—

“The tree is very hardy and vigorous, a great bearer, ripening earlier than any other variety, (Dubois’ Early Golden just now beginning to turn,) and is the only kind, so far as I have experience, worth cultivating here. I hope you may receive the few specimens sent in good order. I sent some last year to Dr. Brincklé, who thinks it worthy of general introduction.”

We were highly pleased with the appearance and quality of the fruit, and did not identify it with any of the older kinds, and doubt not it is a seedling, whose good qualities of earliness, hardiness and productiveness must give it a claim over the rather shy-bearing foreign kinds. We think it well worthy of the attention of cultivators.

RUSSELL’S RED RASPBERRY.—This is a new seedling, raised by our correspondent, Dr. G. W. Russell of Hartford, Conn. It was raised from the seed of the White Antwerp, planted in the autumn of 1851. This variety (White Antwerp) and the kind called the Red Cane, (doubtless the American Red of the books,) grew near together in the garden, in which were also a number of hives of bees. It is probably therefore a cross between the two, and partakes much of the characteristics of each—the hardiness and fruitfulness of the native variety, with much of the high flavor and size of the Antwerp. It was first exhibited to the Horticultural Society of Hartford, July 14, 1854.

The Editor of the *Homestead*, in which it is noticed, considers it a decidedly superior berry to many of those now extensively cultivated for market or for table, and thinks it, with those who now cultivate the American Red, (or Red Cane,) certainly taking all things into consideration, one of our very best varieties. As they become acquainted with it, this will have the preference.

The canes are strong, vigorous, light green, with scattered specks; fruit large, roundish conical, dark, separates freely from the germ, tolerably firm, juicy, with a sweet, rich flavor; very prolific and hardy.

THE IDEN GRAPE.—A writer in the *Country Gentleman* describes a new grape which he considers worthy the attention of those who want hardy grapes. It was found growing in the forest some fifteen miles from Richmond, Indiana, about twenty years ago, and has since been cultivated there more than any other variety, and is highly prized on account of its entire hardiness, productiveness and good quality. Bunch and berry three fourths as large as the Isabella; berry round, black, ripe a few days before the Isabella, and hangs on the vine till cold weather. For cooking it is first rate, and some consider it superior to the Isabella for the dessert, but it will not be pronounced so by good judges. If any one wishes to test the quality of the fruit, and will send Mr. E. Y. Teas, Richmond, Ia., three or four stamps to pay for packing, he will forward samples per express to order, and also furnish the vines if wanted.

GREAT CROP OF STRAWBERRIES.—Mr. C. M. Saxton of New York writes us that a gentleman near Philadelphia told him that ONE HUNDRED AND THIRTY-FIVE BUSHEL of Hovey's Seedling were raised on AN ACRE this season. This is an enormous crop for extensive culture. In small beds, under careful treatment, they have been raised at the rate of two hundred and fifty bushels per acre, but rarely so successfully as above by the acre.

NEW FORM OF TRAINING FRUIT TREES.

FROM THE REVUE HORTICOLE.

THE French are the originators of most of the various modes of training trees. The pyramid, quenouille, goblet, vase and other forms, applied to dwarf trees, and the fan, candelabre, and palmette, with their numerous variations, applied to espaliers or walls, are all the invention of skilful French cultivators. And these forms are not merely described in works on gardening, but they are actually carried out in all the system and detail which render the engravings of these modes so pleasing and attractive to those who are conversant with

the best gardening works. In Du Breuil's elementary work on horticulture, more than thirty different modes of training trees are described, with engravings of each, and these do not comprise many of the forms more recently introduced.

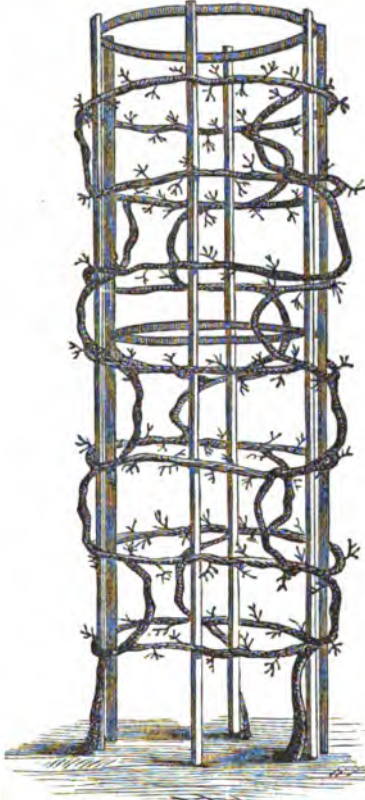
The spiral mode of training, which we described and figured in our January number, is one of the later improvements applied more particularly to the pear. Properly and systematically carried out, nothing could be neater than the tall cylinder covered with foliage and fruit. We do not expect to see either this plan or others that we may describe generally adopted. But there are many zealous and enthusiastic amateurs who admire these fanciful forms, and who are ready to bestow the care and labor necessary to produce them. It is for the information of all who appreciate novelty that we now describe a new form of training, which may be applied to all fruit trees, but especially the pear. In this new mode, however, there appears to us to be one advantage over all the others that we have seen—this is, the grafting or inarching the three trees upon each other, so as to form in reality one tree, by which means an equal vigor is maintained, and they are enabled, when fully grown, to support themselves without any aid, forming superb columns of fruit.

We repeat, we like this new mode of training, and we hope to see it tried by some of the real lovers of beautiful trees and fine fruits:—

I have the pleasure of submitting, for the appreciation of the readers of the *Revue Horticole*, a new mode of training fruit trees, which I have tried with great care, and which I have been highly successful in the management. I shall therefore be happy if the account which I now send can be of any service to cultivators. I only ask of them in exchange to make known, through the pages of your Journal, any changes which they may make in the application of our art.

The following engraving (FIG. 17) represents a modification which I have made of the spiral mode of training described by M. Du Breuil, and figured in the *Revue Horticole*, [a copy of which will be found in our January No., p. 35,] and the cylindrical form of which has been modified by M.

Berger. I have thought, with M. Du Breuil, that the height of two metres [six and a half feet] was not sufficient for the spiral branches, in order to give to each a length of seven metres, [twenty-two feet]; on the other hand, the height of two and a half metres [eight feet] does not appear to correspond with the diameter of the cylinder, and gives it too great



17. CYLINDRICAL TRAINING WITH HORIZONTAL BRANCHES.

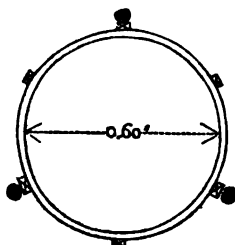
an exposure to the wind. Besides, a person cannot reach to that height without the aid of a ladder for the purpose of pruning and pinching off the shoots, and other cares which fruit trees at all times require; in short, it is necessary that the cylinder should remain as long as the tree itself, which becomes laborious and expensive.

I trust that in making these observations upon the method

of M. Du Breuil, our learned professor will pardon me; they are necessary to explain the manner in which I have modified his system, as he himself has modified that of M. Luiset.

Reflecting upon the subject, I thought it impossible that three isolated trees, supported and directed by the same hand, should always maintain the same vigor; if one becomes more vigorous than the other, the form will become imperfect. Here then is the result of my reflections.

I have taken for my model the wooden cylinder of M. Berger, which is only two metres [six and a half feet] high, (FIG. 17), so that the branches may be trained horizontally, and a diameter of sixty centimetres, [about two feet.] At the root of each tree I drive down a stake about three centimetres [one and a half inches] square, to the depth of eighteen inches. The part buried in the earth is first charred. I then nail to the inside of these stakes, at equal distances, three hoops sixty centimetres [two feet] in diameter. Upon these hoops I nail three other upright stakes of smaller dimensions, [about an inch square], equidistant from the first, but without driving them into the ground very deep, (FIG. 18.)



18. SECTION OF THE CYLINDER.

It is around this cylinder that I place small sticks in the shape I wish to train the trees, fastening each horizontally twenty-four centimetres [about ten inches] from each other, and the first one about thirty centimetres [twelve inches] from the ground. It is necessary that the three trees should cover equally the surface of the cylinder, which is very easily accomplished by bending the first one upon the next one to the right, and doing the same with the two others.

The summer after planting I graft by approach (inarching) the terminal bud of each tree upon the next one to the right,

and gradually, as it pushes, I raise the top of the grafted shoot, and bend it at a slight curve till it reaches the next horizontal stick above, when I bring it to the left. As the two other trees are submitted to the same operation, I graft them again in the same manner as before, and continue from year to year without ever topping the terminal bud.

For planting, I choose trees one year from the bud, which I head down one third of their length after they are set out, in order that they may break stronger.

To sum up, the only care the trees will require are the ordinary training and pinching, in the same manner as for other trees; only I am particular to suppress the laterals gradually which push upon the curved shoots, which is necessary in order to invigorate those upon the horizontal branches.

In fine, when my trees are completed I remove the wooden cylinder and the tree will support itself, and form a very elegant column. I would add that all kinds of fruit trees may be subjected to the same form. It has been noticed that the application of reciprocal inarching upon each tree gives uniformity to vegetation, and a sufficient strength to the tree to sustain itself.

I have given to this style of training the name of "Cylindrical form with horizontal branches."

NEW ENGLAND SHRUBS.

BY WILSON FLAGG.

THE ALDER.—All persons, however ignorant of trees and shrubs in general, are familiar with the common alder, (*Alnus serrulata*.) It is found in almost all wet places, skirting the banks of small rivers and brooks, bordering the sides of old turnpike roads, filling up the hollows in wet grounds intersected by ditches, and covering with their monotonous green foliage many an unsightly tract of land, and hiding and alternately revealing the glittering surface of many a sluggish stream and mere. The alder is one of the homely instruments in the hand of nature, who uses them for the

accomplishment of many important ends. Their shrubbery and foliage constitute the plain embroidery of watercourses, and form the ground upon which many a beautiful flowering shrub is as it were depicted and rendered more interesting by contrast. The alder among shrubs takes the place which is occupied by the grasses among herbs, having no great beauty in itself, but serving to set off to advantage the beauty of other plants that flourish in its locality. Nature likewise employs its roots, which are numerous and binding, as a sort of subterranean net-work to strengthen the banks of streams and defend them from the force of torrents.

The alder does not grow erect, and is never found standing singly, but invariably forms a clump, the different individuals of the collection making an outward curve, and bending inwards toward one another at their summits. Were it not so it could not present that almost uniform mass of foliage which marks its present appearance. Were it a thicket of single upright trees growing compactly, instead of a coppice of irregularly growing shrubs, its foliage would be mostly superficial, the interior constituting a space filled only by the naked shafts of the trees. This is one of the distinguishing points of difference between a thicket of trees and a thicket of shrubs, supposing each to be of the same height.

The foliage of the alder is not inelegant, the leaves being glossy, rather coriaceous, widened and rounded at the end, and narrowing towards the stem. It is of a lively green, with considerable gloss, and is very important to the landscape during the summer, but in the autumn it shows none of the characteristic hues of the season, retaining its verdure till it falls to the ground. Many persons, perhaps, are not aware that the alder bears flowers of considerable beauty—beauty which is surpassed by the blossoms of none of the amentaceous trees and shrubs. The barren aments that come forth to greet the earliest arrival of spring are long, flowing, and beautifully variegated with maroon and yellow, usually appearing in clusters of four or five of different lengths. While the barren flowers are pendulous, the fertile aments proceeding from the same point are erect.

The alder is an important shrub in our native landscape. Notwithstanding its want of grace and beauty, it is serviceable by constituting the principal part of the shrubbery that borders the small streams, when they pass through the low peaty lands. The long rows of green foliage, presenting almost the uniformity of a hedgerow on the banks of the streams, are composed almost entirely of alders. Neither trees nor shrubs are valuable, as landscape ornaments, in exact proportion to their beauty. The graceful Dogwood (*Rhus vernix*) would, if equally abundant, form a mass of shrubbery not to be compared as a beautifier of the landscape to the homely alder; as the homely grasses form a carpet for the earth, surpassing anything that could be produced by a universal carpet of beautiful flowers.

The speckled alder occupies the same situations as the common alder, and resembles it in properties and in general appearance. It is distinguished by producing its fertile aments pointing downwards, instead of upwards as in the other species. There is some difference in their leaves and bark, not easily recognized except by a botanist.

THE HOLLY.—The Holly is one of the most celebrated evergreens of modern times. In Europe it has been almost universally employed for the decoration of churches and other halls during Christmas :

Christmas, the joyous period of the year :
Now with bright Holly all the temples strow,
With laurel green and sacred mistletoe.—*Gay*.

The poets have made it the symbol of forethought, because its leaves are saved from the browsing of animals by the thorns that invest them, and the berries concealed in their prickly foliage are stored for the use of birds in winter.

The Holly (*Ilex opaca*) is found in the southern part of Massachusetts, but it is still more common in the Middle and Southern States, where it grows to the height of a tree. The leaves are evergreen and invested with thorns; they are beautifully shaped, having a scalloped outline similar to the oak leaf. It not only retains its foliage, but also the brilliancy of its verdure throughout the year, so that with its scarlet berries it is a very attractive object in the winter.

FALSE HOLLY.—(*Nemopanthes canadensis*.)—This is a plant of which there is only one species in the genus. It is remarkable for the beauty of its fruit and foliage, neither of which however are showy. The flower is very small, with a long, slender and thread-like stem, and without beauty. The chief attractions of the plant consist in its berries and foliage, the one being perfectly globular and of a fine purple color, and the other finely serrated like a rose-leaf. It is found occasionally in wet places throughout New England, and never fails by its peculiar beauty to attract the attention of parties making an excursion in the woods.

PRINOS.—Allied to the Holly is the genus *Prinos*, which includes three native species, mostly distinguished like the Holly by their scarlet winter berries. One species also has evergreen leaves. The most common species in Massachusetts is the Black Alder, (*Prinos verticillatus*.) This shrub is about eight or ten feet high, in general appearance somewhat resembling the common alder, whence it derived its name. The distinguishing marks of this shrub and the next species are the bright scarlet berries that make them very conspicuous in winter, after they have shed their leaves. The flowers are small, white and destitute of beauty. The berries are bitter and possessed of valuable tonic properties.

The other deciduous species (*P. laevigatus*) is distinguished from the first by its fruit, which is solitary instead of being arranged in whorls around the stem. Hence its name—the Single-berry black alder.

The *Prinos glaber*, or evergreen *Prinos*, is the most valuable species of the genus; but it is not common in New England, being found only in the country around Plymouth. It is a very valuable evergreen for ornamental grounds, and on account of the delicate texture of the leaves and the slenderness of the branches, it is serviceable to introduce into bouquets, to mix with the flowers. I believe it bears cultivation well and might be successfully employed for ornamental purposes.

REVIEW.

PEAR CULTURE.—A Manual for the Propagation, Planting, Cultivation and Management of the Pear Tree, with Descriptions and Illustrations of the most productive of the fine varieties and selections of kinds most profitably grown for market. By THOS. W. FIELD. New York: 1858.

The interest in pear culture which is so strongly manifest throughout the country, and the absence of any small work exclusively treating upon this fruit, has induced the author to supply the deficiency by the preparation of this manual. "In constant conversation with horticulturists," says Mr. Field in his preface, "the want of a manual of pear culture, so often suggested by them, originated in my mind the idea of collating the experience of the best cultivators, and stimulated by my own hearty love of the subject, I have executed the work now offered to the lovers of that noble fruit."

It is no small task to attempt the publication of a treatise on a subject requiring such large experience and careful observation as that of pear culture, upon which so much has already been written, and upon which there yet exists such a variety of opinion even among skilful cultivators, and Mr. Field, in making his manual a contribution of the best pomologists, rather than a detail of his somewhat limited experience, shows that he fully appreciates the difficulty of the work.

A fruit of so much importance as the pear has become to be in its present improved condition, contributing its fruit for eight months of the year, and the immense number of trees which are annually planted, seems to require something more than the brief directions which accompany ordinary treatises upon fruits, and in the absence of a thorough work, which the experience of no one has been enabled to supply, such a volume as Mr. Field's, giving the opinions of the best pear cultivators in the country, is perhaps the best, and will prepare the way for a more complete treatise upon the subject.

We have not time to follow Mr. Field in the details of his volume. Generally where he has given his own views they coincide with other well known writers, but there are one or

two paragraphs which we should be unwilling to endorse in any work of this kind. In speaking of the influence of the graft, Mr. F. says:—"The influence of the stock upon grafts is very marked. The fruits of early summer varieties are retarded in their ripening when grafted upon winter varieties; and pears that should keep till Easter, will ripen in December, if the tree which produced them was grafted upon a summer variety."

This is contrary to all our experience in pear culture. Among thousands of bearing trees grafted upon all kinds of stocks, some early, some fall, some kinds that keep a year, we have never found a week's difference in the ripening of any winter pear. The stock does not exert any such influence. Such remarks only tend to lessen the value of what is really correct.

Again. "It is not unfrequent that trees exhibiting every quality requisite for fruiting, fail for many years to produce a single pear, when the application of a bushel of lime, a dressing of wood ashes, a small quantity of bone meal, or of iron filings, or refuse sand from the foundry, has brought them into immediate fruitfulness. I have seen some very surprising effects of some of these materials in the vigorous growth and fruiting of trees hitherto barren. It should be understood that a tree can no more grow and produce fruit *when one of its elements is lacking*, though all others were present, than a house can be built when all its materials except the nails have been obtained."

This is all sheer nonsense. The surprising effects so often reported in the newspapers amount to nothing. They remind us of the story related of the Heathcot pear, which was an accidental seedling on the Gore place at Waltham, Mass. It came up by the wall, and was left to bear; but it continued to grow and grow until it exhausted the patience of the owner when he told his gardener to cut it down. Axe in hand he went up to the tree to perform his task, but just as he was lifting his arm to strike the first blow, his observing eye caught a glance of a branch full of fruit buds, and dropping the axe he hastened to inform the proprietor of the circumstance. On learning that it was likely to produce fruit he

concluded not to cut it down, and the result every pomologist knows was the production of one of our best native pears. So it has been with the bone-dusted, lime-treated, iron-fed and sanded trees. They would have borne just as quick without these materials as with them ; there is not the least proof that they would not. Because they had never borne before, the conclusion is arrived at that they never would bear, when probably they were just ready to fruit.

And will Mr. Field inform us if he ever knew *one of the elements of the pear tree* to be lacking in any soil under the sun ? If not, why continue to put such matter in a book intended to teach—not mystify—the learner, who, ten to one, will do, as we knew a person to, run all round after iron filings—for his pear trees—and two years after he had given each tree only a quart each, dig them up and throw them away as worthless. No iron filings, lime, or similar materials, ever touched a root of any of the fine trees which Mr. Field saw around Boston, and which he praises so highly and deservedly. It is such illustrations of pear culture as this which create so much prejudice against book knowledge, in the place of observation and experience.

These, however, are only some of the minor faults of the book:—on the contrary there are some good hints, very good—indeed most important, one of which we quote, as we do not recollect to have seen it before, and give the author credit for it:—“Many persons,” he says, “imagine it necessary to choose a wet day for planting trees ; on a light sandy loam little injury would result, perhaps, but for planting upon a strong loam, or clayey soil, no choice could be more injudicious.” Again, “Contrary to the usual belief the day selected ought not only to be dry, but at least two or three days should have elapsed after the falling of rain before planting is commenced.” This is sound doctrine, and if we had time we should like to enlarge upon it.

The work is illustrated with engravings of the best modes of pruning trees from Du Breuil's excellent manual, and it concludes with a list, with descriptions and engravings, of the best market pears, the selection being generally very judicious, though limited.

Gossip of the Month.

VERBENAS.—I find it a general complaint that verbenas do not thrive this season. During the ten or twelve years that I have cultivated them, they have never done so poorly as this season. I attribute it to the sudden change of weather, from a cold and rather wet May to a hot and sultry June. You will probably recollect that the last half of May and the first week in June were rather cold and wet, until the 10th, when, after a storm, it came off intensely hot—thermometer rising to 88° and upwards, and continued so for at least ten or twelve days, without rain, or in fact cloudy weather. Thermometer at the highest point, 102°. This very hot weather gave the verbenas a severe scathing, as it came on at a time when they were the least prepared for it, for the ground had been so cold previous to it, that they had not spread their roots far or deep enough to stand the severe test; consequently they were decidedly used up. Last season I gathered a large quantity of very well grown seed, while this season I have not yet collected a teaspoonful. I have about one hundred varieties growing in twelve inch pots that have done very well, though they have not made the show they would in ordinary seasons.

I do not know as you will agree with me as to the cause of the verbenas looking as they do, but I know not what else to attribute it to, and should like to hear your opinion in regard to the matter. One thing I am certain, we are getting into foreign varieties too much. They do not stand our hot sun like the American seedlings. I have had a large circular bed of mostly foreign varieties, with some half dozen Americans—among the latter, your *Cerulean Orb*. The last named varieties have stood the test best. The English varieties do very well in the house, and for a short time out doors, but July and August generally use them up. With few exceptions, we must depend upon home manufacture. What say you?—Yours, **Dexter Snow**, *Springfield, Mass., Aug. 1858.*

[We believe it is the general complaint that the verbenas have not done well this year. Our own beds looked poorly enough a week or two ago, but just now are finer than we ever saw them. We can hardly attribute their want of vigor to the hot weather of June—at least ours did not suffer then. We are inclined to attribute the cause of their growing so poorly to the long and continued cool and wet weather of July, which actually rotted off some of the more feeble kinds. Our plants were not set out till the second week in June, and therefore we cannot say how they would have been affected by the wet and cold weather of May had they been planted earlier. Within the last ten days they have grown more than all the rest of the season, and now cover the ground and present a blaze of bloom unsurpassed.

We doubt not there is much truth in the remark that we must rely more upon our own seedlings than upon foreign sorts, as being better adapted to our climate. There is scarcely any doubt of this. We can see that our

own seedlings, as well as those of other growers, are generally much more vigorous than the same number of foreign plants.

And why should we depend upon foreign kinds? Is not our climate far better adapted to the growth of the verbena than that of Great Britain? and will they not seed much more freely? Why, then, should we not send verbenas abroad as well as the French cultivators? Simply because we do not follow up their production to anything like the extent of the English florists, who do not expect more than one good seedling out of a thousand. Let the varieties for seedlings be selected with an eye to new combinations of colors, as well as the size and shape of the flowers and habit of the plant, and, if proper care is bestowed upon them, as fine seedlings may be raised as European florists can produce. A year or two ago, before the French supplied the English cultivators with the new-eyed varieties, American seedlings surpassed any that we ever saw from abroad. *Cerulean Orb*, *Hiawatha*, *Orb of Day*, *May Morn* and *Sunlight*, still retain their place aside of any of the same class that have been introduced.—ED.]

EFFECTS OF FROST ON VEGETATION.—Dear Sir: I am sorry that you have invited me to reply again to your remarks on my observations. The controversy, as you intimate in your closing paragraph, begins to look like as if we had a "hobby to ride," and were pressing on the poor jaded steed for the mere name of victory. I am content to leave the matter to future experiments and other observers—with the only remark, that few other subjects are more worthy the investigation of practical men. I will, in the explanation you ask, however, be brief.

"Will Mr. Meehan explain why *Rhododendron ponticum* will not stand the same dryness of a native species, if it is not freezing and thawing that does the injury, but excessive evaporation?" I repeat, in reply, what I have asked before, "How does freezing and thawing effect the injury?" That freezing and thawing does do injury to vegetation we all know; but what I ask is, does such freezing and thawing injure by disrupting the cells? or, as I contend, by aiding evaporation? If cells will bear one freezing without disruption, why may they not bear a thousand? I may ask, in turn, if freezing and thawing kill *Rhododendron ponticum*, why it will not kill the native kinds? But if I were to reply inversely as you do, "simply because they are hardy," I should not think I had given any more reason than if asked why are they hardy? I should reply, "because they are."

You remark, also, "We are utterly surprised to hear Mr. Meehan state that the camellia will not stand 22° of frost." So was I. But, on looking for what I did say, found you were mistaken. I wrote, as you have correctly printed, "I have known the thermometer fall to 22°, and myrtles and camellias remain uninjured." Mr. Hovey certainly did not imagine that I was ignorant of the fact that camellias stand out tolerably well in Baltimore, or that I had some idea of its temperature.

I have carefully weighed all that the editor and Mr. Sargent have adduced, and I think it all amounts to this: Plants suffer most when subjected

to the greatest amount of freezing and thawing; therefore, freezing and thawing disrupts the cells and destroys the plant.

I accept all the facts, but differ in the conclusion. I want evidence that the cells are disrupted, and in the meantime claim that freezing and thawing is only one of the many processes that aid "excessive evaporation."

I have innumerable facts which bear on the case, but do not feel justified in occupying your space; nor, indeed, do I think anything further necessary, unless you or any of your correspondents should at any time think it desirable.

As Mr. Hovey intends to experiment, allow me to propose one; on my part I will try any he may suggest in support of the disrupted cell—or whatever other process *except* "evaporation"—theory which the freezing and thawing examples are intended to support. Let two 4 to 8 year tulip trees (*Liriodendron tulipifera*) be selected that can be found in Mr. Hovey's nursery in an exposed situation. Let one of them be transplanted with every care in December, or just before winter sets in properly, to within but a few feet of where the other stands, so that the same amount of frost, sun and cold winds shall act equally on both. If a portion or all of the tulip tree removed be found dead in the spring, I will ask Mr. Hovey to explain how the freezing and thawing did it in the one and not in the other tree? If it is not found injured I shall be disappointed. To select two specimens of different species, as a Hardy Rhododendron against *R. ponticum*, (which, by the way, will stand successfully 32° in the *moist atmosphere* along the banks of the Schuylkill River here, but not in the *drier air* further inland,) does not prove more for broken cells than it does for evaporation.—Truly yours, THOMAS MEEHAN.

Massachusetts Horticultural Society.

Saturday, April 3, 1858.—The stated quarterly meeting of the Society was held to-day—Vice President Rand in the chair.

The Committee appointed to revise the By-Laws reported progress.

Prof. Jenks, from the Committee on the Food of the Robin, was requested to make a report.

Prof. John Lewis Russell was added to the Committee on the distribution of Seeds from the Patent Office.

H. Grundel, Roxbury, and A. Cheney, were elected members.

Adjourned for one month to May 1.

May 1.—An adjourned meeting was held to-day—the President in the chair.

It was voted that ten cents be charged for admission to the monthly exhibitions.

Miss E. M. Harris, Jamaica Plain, and F. W. Andrews, Boston, were elected members.

Adjourned two weeks to May 15th.

May 15.—An adjourned meeting was held to-day, but no business coming before the Society, it was adjourned three weeks to June 5th.

June 5.—An adjourned meeting was held to-day, and in the absence of the officers, the Hon. J. S. Cabot was called to the chair.

E. C. Prescott, Boston, was elected a member. Meeting adjourned,

July 3.—The stated quarterly meeting of the Society was held to-day—the President in the chair.

J. S. Cabot, from the Committee on the distribution of Seeds by the Patent Office, made a verbal report, and read a communication received from the Pennsylvania Horticultural Society. The letter was referred to the Committee, with orders to correspond with that Society in regard to the best measures to be adopted.

W. R. Austin, Prof. Jenks, and E. Wight, were appointed a Committee to consider the appropriation of \$100 towards purchasing the collection of insects belonging to the late Dr. Harris, and reported that the award be paid on condition that the collection should be retained in Boston, with the privilege of being accessible to the members at all times.

Prof. Jenks made a further and very interesting verbal report in regard to the food of the robin, detailing the experiments he had made to ascertain the same. The thanks of the Society were voted to Dr. Fitch of New York for the aid he had given to the Committee in identifying the various insects presented by Prof. Jenks for his examination.

The Committee on the By-Laws reported progress.

Wm. H. Barnes, Roxbury, and J. H. Thorndike and F. H. Storer, Boston, were elected members. Adjourned one month to Aug. 7.

July 24.—Exhibited. *Fruits:* From J. W. Foster, La Fertile, La Versailles and Cherry currants (the latter extra), and Knevet's Giant raspberries. From T. Clapp, White Dutch and Red Grape currants. From W. C. Strong, La Circassa, La Versailles, Macrocarpa, and Champagne currants. From Capt. Wilson, extra large Cherry currants. From J. F. Mitchell, very fine gooseberries. From J. F. Allen, grapes and fine peaches.

July 31.—Exhibited. *Fruits:* From W. H. Palmer, Madeleine pears, extra large and fine. From J. W. Foster, Victoria and Red Dutch currants. From F. Dana, very fine seedling white currants and Dorchester blackberries. From J. Nugent, Dorchester blackberries. From W. Wales, Black Hamburg grapes, very handsome bunches and large berries, but not very well colored. From G. Merriam, Dorchester blackberries, Madeleine pears and Belle Magnifique cherries. From A. D. Webber, extra large gooseberries, (six varieties.) Grapes and fine peaches from J. F. Allen.

August 7.—An adjourned meeting of the Society was held to-day—the President in the chair.

On motion of Dr. Wight the President was requested to report at the next meeting a list of thirteen delegates to attend the next meeting of the Pomological Society in New York in September next.

Messrs. W. A. Harris, P. B. Hovey, D. T. Curtis, E. S. Rand, Jr., and A. C. Bowditch, were appointed a Committee to nominate officers for the ensuing year.

A letter was read from the Proprietors of Mount Auburn Cemetery, requesting a Committee of Conference in regard to the interests of the Massachusetts Horticultural Society in Mount Auburn, and the President, M. P. Wilder, S. Walker, E. S. Rand, C. M. Hovey and W. R. Austin were appointed a Committee for that purpose.

E. S. Rand, from the Committee on the By-Laws, reported a revised code, which was read twice, amended and accepted. It was voted to print twenty-five copies for distribution and examination previous to the final vote at the next quarterly meeting in October.

C. O. Whitmore, Boston, J. A. Estabrook, Belmont, R. W. Turner, Jr., Randolph, and S. Blagge, Waltham, were elected members.

Adjourned two weeks to Aug. 21.

Exhibited.—**FRUIT:** From G. Merriam, Dorchester blackberries, very fine. From S. Blagge, six varieties of grapes. From F. Dana, Dorchester blackberries. From J. Nugent, Dorchester blackberries, extra fine. From B. Harrington, Red Astrachan and Williams apples. From E. S. Rand, Geo. IV. peaches. From M. Trautman, Dorchester blackberries. From Dr. Durfee, very fine Early York peaches. From S. W. Fowle, Myrobalan plums. Hovey & Co., J. S. Cabot, and A. D. Webber, Sweet Doyenné d'Ete pears. J. F. Allen, grapes. From N. White, Early Harvest apples. From E. Brown, Jargonelle and Madeleine pears, and Early Harvest and Red Astrachan apples. From H. Vandine, Peach and Jaune Hative plums, Dorchester blackberries and Madeleine pears.

PREMIUMS AWARDED FOR FRUIT.

CHERRIES.—For the best, to Wm. Bacon, for Black Tartarian, \$5.

For the next, to Geo. B. Cordwell, for the same, \$4.

For the next, to C. E. Grant, for Napoleon Bigarreau, \$3.

GRAPES, (forced.)—For the best, to Mrs. F. B. Durfee.

For the next, to N. Stetson.

For the next, to M. H. Simpson.

PEACHES.—For the best, to O. Bennett, \$5.

For the next, to C. S. Holbrook, \$3.

STRAWBERRIES.—For the best, to Hovey & Co., for Boston Pine, \$5.

For the next, to W. H. Barnes, for Brighton Pine, \$4.

For the next, to C. Copeland, for Jenny Lind, \$3.

For the next, to Stone & Son, for Hovey Seedling, \$2.

GRATUITIES.—To O. Bennett, the silver medal for Lady Downe's Seedling grape.

To H. H. Hunnewell, the silver medal for fine show of strawberries.

Aug. 14.—*Exhibited.* **FRUITS:** From S. Sweetser, Early Harvest apples. Dorchester blackberries from C. E. Grant, F. Dana, J. Nugent, and G. Merriam; twenty-five berries of Mr. Merriam's, weighed 5 11-16 ounces. Mr. L. Jennings exhibited the Lawton, twenty-five berries of which weighed

6 1-16 ounces, a difference of 6-16 of an ounce only in that number of berries. From T. Claap, three var. of apples. From J. W. Foster, Early Harvest and four other var. of apples, Victoria currants and Dorchester blackberries. From B. Harrington, Williams and other apples. From J. F. Allen, Manning's Elizabeth pears, grapes, figs and lemons. From H. Vandine, five var. plums, Red Astrachan apples, and Doyenné d'Ete pears. From E. S. Holbrook, grapes, very large bunches, but not well colored. E. Brown, Early Bough and Astrachan apples, and Jargonelle pears.

Aug. 21.—An adjourned meeting of the Society was held to-day—the President in the chair.

The President presented the following list of delegates to the American Pomological Society in New York, and it was voted that they have power to fill vacancies:—Samuel Walker, J. S. Cabot, B. V. French, Cheever Newhall, E. S. Rand, E. Wight, J. Breck, C. M. Hovey, W. R. Austin, W. C. Strong, J. F. C. Hyde, E. A. Story, D. T. Curtis.

Mr. W. A. Harris, from the Committee to nominate officers, reported, and it was voted that the report be recommitted.

Eben Wight presented a communication from T. D. Anderson, accepting the office of Corresponding member.

E. S. Rand presented printed copies of amendments to By-Laws, and it was voted that the subject be considered on the first Saturday of October.

Sundry regulations, presented by the Committee of Arrangements for the government of the Annual Exhibition, were approved.

Mr. Harris reported anew a list of officers for the ensuing year.

Adjourned to Sept. 4.

Exhibited.—**FLOWERS:** From J. Breck & Son, a large collection of annuals, phloxes, and petunias. From Barnes & Washburn, annuals in variety, phloxes, &c. From A. Apple, annuals in variety, phloxes, roses, &c. W. C. Strong, C. Copeland and G. G. Hubbard furnished fine collections of roses, dahlias, verbenas, &c. From J. F. Allen, the Blue lily, and from T. G. Whytal, phloxes, roses and dahlias. From E. S. Rand, Jr., several very fine varieties of Gladioli, roses, fuchsias, petunias, dahlias, &c. M. Trautman had *Brugmansia Knightii*, *Justicia carnea superba*, and other flowers.

From Hovey & Co. came a collection of annuals in large variety, and including several new things, among which were the Hare's-foot grass, *Martynia fragrans*, Perfection and Pæony asters, &c. &c.; also several new phloxes, and new and rare petunias, among the latter *Van Houttei*, *Inimitable*, *Emerald*, *Flag of America*, &c. &c. Other smaller collections came from J. Nugent, Jona. French, T. W. Walker, F. Winship, Miss E. M. Harris, and others.

AWARD OF PREMIUMS.

PETUNIAS.—For the best display, to Hovey & Co., \$4.

PHLOXES.—For the best ten flowers, to J. Breck & Son, for *Mad. Bassville*, *Mad. Boudin*, *Anne Hail*, *Souvenir de la Mer*, *Souv. 29th Oct.*, *M. Hardy*, *Hersine*, *Rubra superba*, *Carminaria*, *Macrantha*, \$5.

For the next, to Hovey & Co., for M. Hardy, Laurent St. Cyr, Countess of Home, Rubra superba, Louise Mezand, Mad. Judith, Le Can-deur, Gem, M. Margottin, and Seedling, \$4. (The collection was placed second because it contained the Countess of Home, an early bloomed variety!)

For the next, to T. G. Whytal, \$3.

BALSAMS.—For the best, to Barnes & Washburn, \$4.

For the next, to T. G. Whytal, \$3.

ANNUALS.—For the best display, to J. Breck & Son, \$6.

For the next, to Barnes & Washburn, \$4.

FRUIT: A fine display of summer fruits was made to-day—too numerous to name in detail. Very fine grapes came from Wm. P. Perkins, embracing the Cannon Hall and Muscat of Alexandria. Extra fine Dorchester blackberries from J. Nugent. Superior Williams apples from B. Harrington and G. B. Cutter. Messrs. Hovey & Co. sent twenty-five varieties of summer pears, among which were the Beau Present d'Artois, Boston, Ott, Limon, Osband's Summer, Rostiezer, Muskingum, Watson, Ananas d'Ete, &c. From Mr. Wilder came handsome Bloodgood, Rostiezer and other kinds. Mr. Vandine had a fine display of eight var. of plums. Mrs. S. Cole, Muskingum pears, very handsome, and several other varieties. J. Gordon, W. W. Wheildon, T. Clapp, J. W. Foster, E. Brown, P. R. L. Stone and others sent apples and pears in variety.

Obituary.

DEATH OF MRS. LOUDON.—The *Gardeners' Chronicle* announces the death of Mrs. Jane Loudon, which took place in London on the 13th of July:—

"We regret to announce the death of Mrs. Loudon at an advanced age. This lady was the widow of the late J. C. Loudon, the great horticultural compiler, and was herself the authoress of some popular works on gardening and garden flowers."

We doubt not some competent writer will appropriately notice this event. Thus has passed away Mrs. Loudon, who, with her husband, has done more for the advancement of Horticulture during the present century than any other individuals. The numerous works which they together and separately produced are the best evidence of this. To their combined labors are American cultivators, especially, indebted; for the *Gardeners' Magazine* and other works, the production of the pens of each, have been more extensively disseminated, read and followed than the writings of all other European authors combined. We shall look for a full account of the life and labors of Mrs. Loudon, which we shall transfer to our pages.

Horticultural Operations

FOR SEPTEMBER.

FRUIT DEPARTMENT.

THE month of August, like July, continued cool, with cloudy and stormy weather and east winds. The morning of the 24th being very cool, with the thermometer at 41°, and in low grounds, a few miles in the country, there was a heavy white frost. The highest range of temperature was only 82°.

September is a busy month in the fruit garden. The pears begin to ripen, and need attention in gathering and ripening. Other fruits, also, require care. In the houses the grape vines will now be ripening up their crop.

GRAPE VINES, started last month, or now set to work, will need more than ordinary care, as the first two months of forcing is the critical time. Keep up an even temperature, guard against sudden draughts of air, and supply moisture freely. Vines in the grapery will now be at rest, and the house may remain open night and day to ripen and mature the wood. Vines in cold houses are later than usual, on account of the cool summer. Advantage should be taken of good dry weather and clear sun to air freely, closing the house early to obtain a good night temperature.

PEACH TREES, in pots, should be rather sparingly watered.

FIG TREES, in pots, ripening their fruit, should be abundantly supplied with moisture. Unlike other fruits these require plenty of water.

PEAR TREES may yet be pruned of superfluous wood. Thin out all poor specimens from the late pears, which will still benefit the crop, and gather the earlier sorts in good season to ripen in the house.

BUDDING should all be completed soon.

STRAWBERRY BEDS, made last month, should be hoed often and kept clean of all weeds; cut off all runners if good strong plants are wanted to fruit next year. Beds may yet be made.

FLOWER DEPARTMENT.

With September come additional cares and labors. It is not safe to leave greenhouse plants out the whole of this month, though often there are no frosts to do injury. By the middle of the month many of the more tender plants should be housed, and others placed in frames, where they can not only be protected from cold, but from heavy autumn rains. Previous to removing any of the plants in-doors, the houses should be thoroughly cleaned; the glass washed of all dirt, the stages washed down, the flues put in order, and everything made neat and clean. Every pot should be well washed, and the plants themselves made as clean as possible by repeated syringings. Begin early, and not hurry the plants all in at once.

CAMELLIAS should be freely syringed and well watered at the root. Remove them to the house in good season.

AZALEAS should be removed to a somewhat open aspect to ripen up the wood. Syringe occasionally, but do not water too freely. Remove them to the house before cold rains set in.

PELARGONIUMS, just repotted, should have the protection of a frame till they push fresh roots.

CINERARIAS, sown last month, should be potted off, and have the protection of a frame.

CALCEOLARIAS may be treated the same as *Cinerarias*.

VERBENAS, for winter blooming, should be removed to a frame, where they can be protected from cold rains.

CHRYSANTHEMUMS should be shifted into their blooming pots immediately, if not already done. Water liberally, using liquid manure occasionally.

HEATHS, planted out in the open ground, should be potted immediately, and have the shelter of a frame till rooted.

MONTHLY CARNATIONS should be potted immediately, for early winter blooming.

NEAPOLITAN VIOLETS should be potted this month.

NEMOPHILA SEEDS may still be sown for blooming in pots. Pot off those sown in August.

OXALISES may be potted now.

CUTTINGS of *Petunias*, *Verbenas*, *Salvias*, and other bedding plants, should now be put in for a winter stock.

PLANTS, of all kinds, should be cleaned, tied up, and put in order for housing. All the frames should be put in requisition for the smaller plants, which are better kept there than in the house.

CLIMBERS, trained over the roof, should be thinned of superfluous wood, and neatly tied to the trellis.

PREPARE SOIL for winter use, if not already done.

FLOWER GARDEN AND SHRUBBERY.

The garden should not be neglected because autumn is approaching; although many flowers are on the wane, there are others which still have much beauty, and many shrubs, and the evergreens, possess all the attractions of summer. Roll and rake the walks, and mow the lawns. Remove all decayed flower stalks and superfluous foliage from the borders, and they will yet be attractive.

CARNATION AND PICOTEÉ layers should be planted out, where they can have some little protection during winter.

NEAPOLITAN VIOLETS should be planted in frames.

WHITE LILIES should be planted.

PRONIES may be transplanted.

DAHLIAS should be watered freely, if dry weather sets in, and superfluous laterals cut away.

DAISIES should be removed to a frame.

JAPAN LILIES, now in full bloom, retain their beauty much longer if shaded from the hot sun and heavy dews.

PANSIES may be propagated by cuttings and division of the roots.

ERITHRYNAS should be taken up early, as the frost will injure the roots.

EVERGREEN TREES may be transplanted with perfect safety all this month.

BEDS FOR TULIPS, and other spring bulbs, should now be turned over and prepared for planting next month.

THE PROFITS OF PEAR CULTURE.

THE profits of pear culture has of late been the subject of discussion at the meetings of the Pomological Associations of the West, and has occupied much of the attention of the agricultural journals of the country. Even in the more recent works on fruit culture some pages have been devoted to a detail of statements showing the enormous profits of fruit growing in various parts of the country. We have, in our previous volumes, alluded to some of these statements, and questioned the propriety of giving such extravagant accounts, as well as doubted the correctness of some of them, and we were in hopes that more caution would be exercised in the future, in the publication of similar reports. But as unusual importance has now been given to the subject, by the introduction of many of these identical statements, and their apparent endorsement, in the excellent address of Mr. Wilder, before the American Pomological Society, at the meeting in New York in September last, we are induced to bring it once more before our readers, and inquire whether it can be possible that such great profits have been realized, and whether the prominence given to such reports is not detrimental to the true interests of pear culture throughout the country. We shall be as brief as possible in our remarks.

All are familiar with the oft-repeated accounts of immense profits to be realized from the successful culture of various fruits and plants. Not many years ago, the growth of the mulberry and the raising of silk worms throughout the United States was to enrich every individual who engaged in the work; and very recently the growth of the sugar cane was to afford similar remuneration to all who raised this important agricultural product. The profits of grape culture in the West have been rated at the most extravagant sums per acre; and the culture of the raspberry for the New York market has yielded immense results. But all these and many other garden products have failed to satisfy the desire of many of

those who have engaged in their culture with a view to the accumulation of a rapid fortune, and they have become quite as much, if not more, neglected than if no such fabulous statements had ever been made. It has been discovered that there was no truth whatever in these extravagant stories.

Similar results will follow all similar statements in regard to any particular fruit or plant. Isolated cases of great profits from any one tree, whether it be a pear, a grape, a currant, or a strawberry, must not form the basis of a calculation on a more extended scale of cultivation. That there are instances where great results have been obtained, we do not doubt; but we do deny that they form reliable data upon which cultivators may undertake the growth of fruit with the expectation of the same profit.

That we may be better understood, we copy the remarks and the President's address on the profits of pear culture:—

But the immediate question under consideration is, "Can pears be grown at a profit?" We advocate the affirmative, premising that the conditions of success, to which we have already referred, must be complied with. This inquiry has been satisfactorily answered by pomologists, some of whom I am happy to recognize in this assembly, yet the responsive facts and arguments deserve to be embodied and published under the sanction of this National Assembly. To a record of these as collated from various authorities, so far as they are confirmed by personal observation and experience, I now invite your attention.

The Fruit Growers Society of Western New York, composed of gentlemen of deserved integrity and celebrity, some of whom are on this floor and competent to defend their report, furnish the following instances from that section of the State.

Three White Doyenné pear trees, owned by Mr. Phinney of Canandaigua, one of them small, produce annually fifty to sixty dollars' worth of fine fruit.

A tree of the same variety, owned by Judge Howell of the same place, seventy years of age, has not failed of a good crop for forty years, averaging for the last twenty years twenty

bushels annually, and sold on the tree at sixty dollars per year. This tree has produced for the New York market three thousand seven hundred and fifty dollars' worth of pears.

Three large trees owned by Judge Taylor, of the same kind, yielded in 1854 eleven barrels, and sold for one hundred and thirty-seven dollars.

A young orchard, owned by Mr. Chapin, of four hundred trees, eight years from planting, which produced in 1853 fifteen barrels, selling in New York for four hundred and fifty dollars, and in 1854 fifty barrels, yielding him one thousand dollars.

Similar results have been realized in the State of Massachusetts.

William Bacon, of Roxbury, has about one acre devoted to the pear. The oldest trees were planted eighteen years since, but more than half within a few years. From two trees, the Dix and Beurré Diel, he has realized more than one hundred dollars a year, and, for the whole crop, over one thousand dollars a year.

John Gordon, of Brighton, has three and one fourth acres in his pear orchard. This was commenced in 1841, there being only eight trees on the ground. There are now twelve hundred trees, planted in various years, more than one half of which since 1854. The amount received for his crop from that date to the present, has been from five to six hundred dollars a year, but he remarks, "If I had confined myself to a judicious selection of varieties, it would now bring me two thousand dollars per year."

Wm. R. Austin, of Dorchester, treasurer of the Massachusetts Horticultural Society, has an orchard of between five and six hundred pear trees, mostly on the quince root. These trees are about twelve years of age. One hundred are Louise Bonne de Jerseys. They commenced bearing about three years after planting, and have borne regular crops ever since. They are very healthy, and only eight of the whole number have died since the orchard was commenced. No account of the crops were kept until the year 1851, but Mr. Austin's sales for the next six years amounted to three thousand four hundred and eight dollars.

The Messrs. Hovey, of Cambridge, have a very large collection of bearing pear trees. From two rows, two hundred and ten trees, grafted on the quince, the crop has amounted, some years, to twenty-five barrels.

John Henshaw, of Cambridge, planted about an acre of land principally with pears on the quince. On the fifth year thereafter, he gathered one hundred and twenty bushels of pears, seventy bushels of which he sold at five to six dollars per bushel.

A Buffum pear tree at Worcester, belonging to Mr. Earle, yields annually from thirty to forty dollars' worth of pears. Mr. Pond, of the same city, planted in 1850 three hundred and fifty Bartlett pear trees, one year old from the bud. In 1857 he sold from these trees fifty bushels of pears, at five dollars per bushel, or two hundred and fifty dollars for the crop.

Similar instances of success, in these and in other States, might be multiplied, if time would permit, to prove the age, health, and profit of the pear tree. So deep has the conviction of this truth become, and so uniform the success, that instead of planting trees as in former times, by the single tree or the dozen, cultivators now plant orchards of hundreds and thousands, in firm and reasonable expectation of a large income.

To a majority of these reports we have no objection; they are undoubtedly correct. It is the extravagant character of some of them that attracts our attention, and induces us to notice them more particularly. Let us take one:—

“A young orchard owned by Mr. Chapin, of four hundred trees, eight years from planting, which produced in 1853 fifteen barrels, selling at New York for four hundred and fifty dollars, and in 1854 fifty barrels, yielding him one thousand dollars.”

That such a crop may have been raised and sold for the above sum may be possible; yet it is not probable that one cultivator in a hundred would obtain the same results.—Twenty dollars a barrel is a high price for pears; to bring this price they must be very large and fine, and brought to

market in the very best order. The ordinary price of Bartletts of very fine quality, in Boston market, is ten dollars a barrel, and though the above statement omits the kind of pear, we premise it to have been the White Doyenné, which in New York market brings more than the Bartlett. Altogether the statement sounds very extravagant.

Let us now examine another account recorded in the above extract, and compare it with the last. We shall take one of the most reliable, that of Capt. Austin, an experienced and careful cultivator, who attends to the sale of his fruit personally, disposes of it in small lots to the most advantage, and, by the aid of a fruit-room to keep the later kinds, obtains results which few cultivators can expect.

According to his statement he has from five to six hundred trees, about twelve years of age, and in six years subsequent to 1851 sold about three thousand five hundred dollars' worth of pears; this is an average of about six hundred dollars yearly. With Capt. Austin the culture of the pear is as much a source of recreation as profit; he is ever at work among them; prunes them himself, and devotes valuable time to their growth,—time which few men could afford; yet, with all this attention, we find the six hundred trees averaged in six years about one dollar each, taking one year with the other, a sum which we have found very nearly correct, and one also which will afford a satisfactory profit to all who engage in fruit culture, without the extravagant expectations of "a large income."

Compared with Capt. Austin's account, which gave him one dollar a tree, six to twelve years old, we find Mr. Chapin's orchard of four hundred trees yielded him two dollars and a half a tree, nine years planted, more than twice the sum of Capt. Austin. It must be borne in mind that the trees of the latter are on the quince, which gives immediate crops. On the pear, eight or ten years are as soon as any paying crop can be expected.

The reports of one, two or three trees producing very largely, like those of Mr. Phinney, Judge Howell and others, cannot be taken as a very reliable guide in estimating the ordinary profits of pear culture. That it is profitable we do

not deny ; on the contrary, we believe pear growing—when the public ascertain that other varieties besides the Bartlett, Seckel and White Doyenné are really worth eating—will be much more profitable than the apple, and on favorable soils and localities will become, next to the latter fruit, the most extensively grown in this country.

But we would not mislead the cultivator : we would have him commence with the understanding that pears—that is, fine pears—cannot be produced by the mere setting out of the trees, or that any profit at all can be realized without constant and unremitted attention and labor on his part. Inferior pears are in reality more worthless than apples ; there is, in truth, little or no sale for them. They must be good, or the marketing will cost as much as they are worth. Though the pear is subject to less enemies than the apple, it does not adapt itself to the same neglected treatment as that fruit. Except upon the quince stock, when it must have good culture, the pear is slow in coming into bearing, and, excepting a few sorts, yields no results for eight or ten years, and does not arrive at a full bearing state under fifteen or twenty years. All this time there must be good treatment, that the trees may not receive any check, but keep up a vigorous growth and healthy aspect.

The pear, as we see it exhibited and offered for sale in our market, is essentially a garden fruit ; requiring a somewhat protected locality, a deep rich soil, high culture, judicious pruning, and attention to thinning, gathering, ripening and marketing ;—with all these it will rarely fail to produce a remunerative crop. Our ideas of great incomes in pear growing have come from the not uncommon price which fine specimens command, often selling from two to three dollars per dozen ; but *such* pears are never the product of orchards ; neither are they grown as yet by the acre ; but they come from the trees of loving amateurs, who watch and nurse them almost as they would their own children, caring for them not simply to gratify their taste alone, but as objects of real beauty. It is the surplus product of these amateurs which creates so much admiration, and forms the basis of some of the almost fabulous stories of the profits of pear culture.

Let us then urge all who would enjoy our best fruits to enter zealously into the cultivation of the pear. For eight months out of the twelve it comes to our tables, fresh and mature. Equalling the peach in its melting flesh, and surpassing it in the variety of its flavor, rarely affected by the vicissitudes of climate which often destroy the latter fruit, it is quite as reliable as the apple. Those who can give it the proper culture, can make it a profitable crop; but whether the income be great or small, the luxury of the fruit will be no less; and without entering into calculations as to the result, let all who have a garden plant pears, and the future will pronounce upon the wisdom of the act.

THEORY OF FLOWERS.

ABRIDGED FROM ST. PIERRE.

THE Abbe St. Pierre is well known in the literary world as the author of two remarkable works, the novel of "Paul and Virginia" and the "Studies of Nature." A writer of considerable celebrity said he "should have wished only to have written 'Paul and Virginia'; but that if he had composed the 'Studies of Nature,' he would not have written 'Paul and Virginia'; so easy is it to a man of feeling, well instructed and endowed with the softer affections, to make a pretty romance; but a romance is a trifling thing by the side of profound researches into nature, and the means of making men better, and, as a necessary consequence, happier." Naturalists speak disparagingly of the "Studies of Nature," because the author is rather more fanciful than correct in his theories; but Humboldt, in his work on the "Aspects of Nature," bestows warm praises on the works of St. Pierre, considering him an admirable writer, in spite of his visionary speculations. As a specimen of the ingenuity of this author, and with the hope that it may make an entertaining paper for our readers, we have abridged his remarks on the relation of flowers to the sun. If his theory be incorrect, it has the merit of ingenuity and is highly suggestive.

The corolla of the flower, according to St. Pierre, is intended to reverberate the rays of the sun on the parts of fecundation; and this, he says, will appear beyond doubt if we consider its color and form in most flowers. White is of all colors the most proper for reflecting heat, and white is that bestowed chiefly on flowers that blow in cold seasons and in cold places, as we see to be the case in the snow-drop, the lily of the valley, the hyacinth, and wood anemones, that come into flower in the early spring. But such as blow at warm seasons and in warm situations, as the cockle, the wild poppy, and the blue-bottle, which grow in summer among the corn, are dressed in strong colors, such as purple, deep red and blue, for these absorb the heat without much reflecting it. There are no flowers, however, entirely black; for in that case, their petals, destitute of the power of reflection, would be entirely useless. In general, of whatever color a flower may be, the under part of its corolla, which reflects the rays of the sun, is of a much paler tint than the rest.

The forms of flowers are no less adapted than their colors to reflect the heat. Their corolla, divided into petals, is only an assemblage of mirrors directed to one focus. Of these they have sometimes four, which are plain, as the flower of the colewort among the cruciform; or a complete circle, as the daisy, in the radiated class; or spherical portions, as in the rose; or entire spheres, as the bells of the lily of the valley; or truncated cones, as in the foxglove, the corolla of which is formed like a sewing thimble.

Nature has placed in the focus of these plain, spherical, elliptical, parabolic, and other mirrors, the organs of fecundation in plants. The petals appear so entirely destined to warm these parts, that nature has placed a circle of them round most compound flowers, or rather florets. This may be readily seen in the petals that surround the disks of daisies and of the sun-flower. They are likewise to be seen round most of the umbelliferous plants; though each small flower which composes them has its particular petals, there is a circle of others still greater which encompasses their assemblage, as may be observed in the flowers of the daucus.

There are still other means of multiplying heat in flowers. Sometimes they are placed on stems of no great elevation, in order to collect warmth from the reflection of the earth; sometimes the corolla is glazed over with a shining varnish, as in the yellow ranunculus, or butter cup. Nature sometimes withdraws the corolla, and makes the parts of fecundation shoot forth from the sides of an ear, of a cone, or the branch of a tree. The forms of the spike and the cone appear to be the best adapted for reverberating on them the action of the sun, and to insure their fructification; for they always present some one side or another sheltered from the cold. Hence the aggregation of flowers in a conical or spike form is very common to herbs and trees in the northern regions, and rarely to be found in those of the south. Most of the gramineous plants in the southern countries do not bear their seeds in a spike, or closely compacted ear, but in flowing tufts, and divided into a multitude of particular stems, as the millet and rice.

A proof that the flowers of plants are adapted to the action of heat, according to the nature of every climate, is that many of the European plants vegetate extremely well in the Antilles Islands, but never go to seed. From these facts we infer that it is neither the air nor the soil which is inimical to them, but the sun, which acts with too much violence on their flowers. The author thinks, however, that the plants of temperate climates might be naturalized in the West India Islands, by selecting from the species those varieties whose flowers have the smallest extension, and whose colors are the deepest, or those whose panicles are divergent.

There are other contrivances by which flowers are made capable of reflecting the heat in different degrees of latitude. Sometimes they are raised on elevated stems, to remove them from the reflection of the ground. Hence nature has placed upon trees most of the flowers of the tropics. Sometimes she expands them under the shade of leaves, like those of the palm tree, the banana and the jacu tree, which grow close to the trunk. Such, likewise, are, in our temperate climates, those large, white, bell-formed flowers called lady's smocks, which delight in the shade of the willow.

There are others, like most of the convolvulus tribe, which expand only in the early part of the day, and others that grow close to the ground and expand, as the heartsease, but their drapery is dusky and velveted. Others are disposed in girandoles, and receive the effect of the solar rays only when he is in a certain point of the compass. Such is the girandole of the lilac, which, pointing with various aspects to the east, the south, the west, and the north, presents on the same cluster flowers in bud, others half open, others fully blown, others fading, and all the delightful shades of florification.

There are some flowers, such as the compound, which, being in a horizontal position and completely exposed, behold the sun, like the horizon itself, from his rising to his setting: of this description is the flower of the dandelion. But it possesses peculiar means of sheltering itself from the heat, as it closes entirely whenever the heat becomes excessive. It has been observed to open in summer at half an hour after five in the morning, and to collect its petals towards the centre about nine o'clock. On the other hand, the flower of the garden lettuce, which is in a vertical plane, opens at seven o'clock and shuts at ten. From a series of similar observations, the celebrated Linnæus formed a botanical dial; for he had found plants that opened their flowers at every hour of the day and of the night.

Reverberating flowers may be divided into *perpendicular*, *conical*, *spherical*, *elliptical*, *parabolic*, or *plane*. To these forms we may refer most of the curves of flowers. There are likewise some flowers shaped like a parasol, but the former are more numerous, for the negative effects in every harmony are in much greater number than the positive.

Perpendicular reverberating flowers, which grow adhering by the bark to a cone, to long catkins, or to an ear. Such are those of the cedar, the larch, the fir, the birch, most of the northern gramineous plants, the vegetable productions of cold and lofty mountains, such as the cypress and the pine, and the early blossoming plants in our climates, as the hazel and the willow. A part of the flowers in this position is sheltered from the north wind, and receives the reflection of the sun from the south side.

Conical reverberating flowers reflect on the parts of florification a complete cone of light. Its action is very powerful ; and it is, therefore, remarkable that nature has given this configuration of petal only to flowers that grow under the shade of trees—such as the convolvulus, that twines up round their trunk, and that she has assigned to this flower a very transient duration, for it scarcely lasts half a day. This flower scarcely ever expands in hot countries except in the night, and it is then tinged with violet and blue to weaken its effect.

Spherical reverberating flowers are those whose petals are formed into segments of a circle. These spherically-formed petals have in their focuses the anthers of the flowers, supported on small fibres of greater or less length, as the effect intended may require. It deserves also to be remarked, that each petal is adapted to its particular anthers, sometimes to two or even to three, so that the number of petals in a flower almost always divides exactly that of the anthers. This class of flowers, including the rosacea, is very common in temperate latitudes. They do not throw back the whole reflection of their disks on the anthers, like the convolvulus, but only about the fifth part, because each of their petals, five in number, has its particular focus. Such flowers are rare between the tropics.

Elliptical reverberating flowers are those which present oval-formed cups, narrower at the top than in the middle. This form of calyx, the perpendicular petals of which approach each other in the summit, as in the tulip, shelter in part the bottom of the flower ; and the curves of those petals, which have several focuses, do not collect the rays of the sun towards one single centre. It is remarkable that the oblong-formed flower of the tulip is more common in warm countries than the rose-formed, which are so averse to warm climates that the inhabitants of the Isle of France made fruitless attempts to raise strawberries there, except in an elevated part of the island, under the protection of shrubbery.

Flowers with parabolic or plane mirrors are those which reflect the rays of the sun in a parallel direction. The configuration of the first gives great lustre to the corolla of those

flowers which emit from their bosom a bundle of light, and do not reflect it on the anthers. It is perhaps to weaken the action of it that nature has terminated flowers of this form in a species of corol, which botanists call the spur. Flowers of this sort are frequent between the tropics, as the nasturtium, or nun of Peru.

Flowers with plane mirrors produce the same effects, and nature has multiplied the models of them in our summer flowers, and in those which thrive in warm and sandy soils. Such are the flowers of the dandelion, the daisy, the succory, and the aster, and likewise in the sunflower. These being flowers whose petals have the least activity, are likewise those which are of the longest duration. Their attitudes are varied without end, for the purpose of modifying the action of the sun's rays.

We shall simply recapitulate what has been said respecting their reflecting mirrors. The reverberating perpendicular of a cone, or ear form, collects on the anthers of the flowers an arch of light of about ninety degrees; it represents also, in the inequality of its panels, reflecting surfaces.

The conical reflector, from the perpendicular position of its petals, collects a smaller quantity, and the parabolic reflector, as well as that with plane mirrors, sends back the rays of the sun in a divergent or parallel direction.

The first form appears to be very common in the flowers of the frigid zones; the second in those which thrive in the shade; the third in temperate latitudes; the fourth in warm countries, and the fifth in the torrid zone. It would likewise appear that nature multiplies the divisions of their petals in order to diminish their action. Cones and ears have no petals; the convolvulus has but one; rose-formed flowers have five; elliptical flowers, like the tulip and lily, have six; flowers with plane reflectors, as the radiated, have a greater number.

ENCOURAGEMENT TO YOUNG PLANTERS.

BY R. E., PHILADELPHIA.

It is but a few years since we all looked to Sion House, Woburn Abbey, and other noted European seats for fine trees, evergreens, and other rural embellishments—the beauteous landscape has been modified by art for hundreds of years. It is fully a century since Johnson remarked of Shenstone—Whether “to plant a walk in undulating curves, to place a bench at every turn where there is an object to catch the view, to make water run where it will be heard and to stagnate where it will be seen, to leave intervals where the eye will be pleased, and to thicken the plantation where there is something to be hidden, demand any great powers of mind, I shall not inquire.” It was what Shenstone could do, but what the man of letters could not understand; and what Shenstone displayed at Leasows is being more beautifully displayed in this land of length and breadth.

Massachusetts has her Hunnewell estate, New York her Montgomery Place and Wodenethe, other States have their sunny spots, and we now would assure you that New Jersey has her Woodlawn, the residence of R. S. Field, Esq., near Princeton. It is only a few years since we walked over the ground, then treeless, except in three corners, one grand field of grass, whence the finest views might be obtained. “Here must be the house, and there we shall plant a few trees.” Such was the commencement of Woodlawn as a rural residence. We visited it yesterday—

“Scenes must be beautiful, which, daily viewed,
Please daily, and where novelty survives,
Long knowledge, and the scrutiny of years,
Praise justly due to those I shall describe.”

Woodlawn is approached through a tall wood, whose undergrowth is clumps of Rhododendron, Berberis, Azalea, Kalmia, Andromeda, and other such flowering shrubs adapted to shade and shelter, the opening from which places you in front of the mansion. On your near left are beautiful forms of weeping fountain Willows, Larch, Birch, Sophora, Poplar, Arbor-

vitæ, and others, the latter, a rare specimen anywhere, is here seven feet high and bushy in proportion; in the distance, are Weymouth pines, from thirty-five to forty feet high, and one hundred feet in circumference, their branches kissing the lawn on all sides. Extended on the right are specimen trees in beauteous form and symmetry, excelling each other in growth. The round-headed Norway Maple, thirty-five feet high and nearly as broad; Spanish Chestnut of equal dimensions; the Chinquapin, rarely seen over ten or twelve feet, is here twenty-five feet high and seventy in circumference, loaded with fruit. In the near foreground are rare specimens of evergreens, such as *Washingtonia gigantea*, five feet high; *Thujopsis borealis*, three feet, with its gracefully-feathered branchlets; *Picea cephalónica*, *Picea Benthamiana*, and all the rare hardy sorts. You turn westward and pause at the contemplation, in the distance, of Norway Spruce fifty feet high, faultless in form from base to summit; there the round-headed Austrian Pine, and there the silvery *Abies Fraserii*. In the foreground again are collected in groups (for proper distribution when of sufficient size) the rare pines of the Himalaya mountains. *Abies morinda*, the weeping spruce, producing cones; the ever graceful Deodar, unsurpassed in its silvery drapery. The new Chinese Junipers, with the California *Libocedrus decurrens* of Nuttall, or *Thuja Craigiana* of Jeffreys, the collector. Pause! we are speechless—a glance—there is that living fountain. What is it? *Juniperus squamatum*, ten years old, boiling up five feet high, and gracefully covering its cool basin of green procumbent branchlets, nearly thirty feet in circumference, unsurpassed and unsurpassable. From this we catch a glimpse of a new feature, a Cedar of Lebanon forty feet high, of beautiful outline, loaded with thousands of cones, which will mature in 1859.

Plants the most impatient of removal are handled here with impunity. *Magnolia glauca*, unshapely almost everywhere, is before you, a perfect picture, blooming four months of the year, towering redolent with sweets; and, hand in hand with it, the American Holly, studded at Christmas with its coral ornaments. A walk to the left leads to the retired, secluded beauties of the place, where we saunter and admire every

specimen. The Fan-leaved *Arborvitæ*, always faultless, fifteen feet high; various forms of the Japan and native cedars—the latter, properly selected, rivals the Asiatic Govenian Cypress, and surpasses it far in its facility of adaptation to every outline. Stately specimens of *Abies Douglásii*, seven feet, and lately removed, all fresh. Here stop! There is Downing's "Prince of the Forest," *Magnolia acuminata*, with its curvilinear branches, first pendent, then upright—no feature like it in the Arboretum. We step aside to the spacious lawn, and, soldier-like, face about, and view in silence those faultless specimens just enumerated, adding to the list the native *Arborvitæ*, thirty feet high, with a base in proportion, every inch, from the grass to the summit, unbroken in outline. Napoleon once exclaimed, "those Grays!" a noted company of stately cavalry; we, admiring more that peaceful rank and file, would say, "those Norways!"

But to finish our tour of observation, moving westward the view of the distant horizon is intercepted by Pine trees, planted the past spring to form the back ground of the new PINETUM; all fine specimens, not one dead, no leaders lost, and all as gay with verdure as if located there for years; they are from twenty to twenty-eight feet high, quite proportionate, and Mr. Field handles them about like a walking-cane. They are a well-disciplined army, movable at pleasure, and standing every blast till ordered again elsewhere. Failure! there is no such word in the Woodlawn vocabulary. The proprietor's classic taste directs him in his operations—when to plant, when to cut down, and when to remove. Few students know these critical points; his hand forms the stiff shellbark hickory into a graceful conical tree, its fruitful boughs yielding annually an abundant harvest.

Our indigenous trees are allotted an equal share in the decoration of the place, and in every aspect. The *Pinus rigida* luxuriant, to the eye of many observers would pass for *P. Benthamiana* of California: in juxtaposition with *P. rigida*, is the rugged scrub pine, (*P. inops*.)

We have here another striking feature in several fruit trees, with forms in heads indispensable in the landscape, as shown by Gorrie half a century ago. The towering, tapering Buf-

fum ; the conical, shining-leaved Lawrence ; the fastigiated Vicar ; the dense, coniform Seckel—these in the way of pears are leading objects, all forming an excellent, useful and imposing outline.

The distinct features of several of the apple trees, added to the copious crop this season, were remarkable. Baldwins, with their spreading and pendent branches, loaded with crimson fruit, and the Monmouth Pippin, with its umbrageous flat top, vigorous foliage, and such a crop of one of the finest of apples !

The eye rests everywhere upon some graceful feature ; vast spaces of lawn are broken (but the view preserved) with masses of procumbent Juniper—I say masses, but believe there were only two plants, covering a space of one hundred feet in circumference. I must acknowledge that the above are but tame outlines ; the connoisseur and botanist could more gracefully fill up the spaces.

To the young planter this is an encouraging plantation, based on the secret of laying hold of the first plant that offers, the best of its sort, regardless of size, from an inch upward. Many of these fine specimens were planted when under a foot in height. The Wellingtonia (or Washingtonia it should be) was, eighteen months ago, only that size—now five feet. The hundreds of unique specimens of Fan-leaved Arborvitæ were carried there about ten years ago in a small box ; they were then about one inch in height. Almost every evergreen on the place has been grown or removed within twelve or fourteen years.

The science of landscape gardening has been so beautifully carried out that an excellent kitchen garden is entirely guarded from the eye ; and in an opposite point there is an elegant grapery heated by water, with a bountiful crop of fruit highly colored. The gardener, Mr. NOICE, has held his situation coexistent with the improvement of the place, and is as good in all things as his happy face would lead us to believe.

Now I hear some one ask, how has this been accomplished ? We answer, by the aid of a little money, care, labor, and the knowledge what to do, and when to do it. With a kindly, sandy, loamy soil of considerable depth, placed on a ridge of

rock and gravel, what cannot energy and perseverance accomplish? There are many such soils and positions, but few Fields and Woodlawns.

NEW CALIFORNIA EVERGREENS.

BY R. B. SCOTT.

SOME confusion has arisen, both among nurserymen in this country and in England, with regard to the two evergreens known as *Libocedrus decurrens* and *Thuja gigantea*. Specimens of these are now before me, which are quite distinct in habit, and, as far as can be ascertained without cones, in botanical character also. We can only account for the confusion by the use of imperfect descriptions, or the want of facilities, by the collectors, to refer to authentic specimens and books. This uncertainty should at once be cleared up, and to aid in this object I give you my observations.

Libocedrus decurrens of several collections in this country and in England, is known to some as *Thuja Craigiana*, having been sent home by Mr. Jeffreys, the collector, under that name. This corresponds in description with the *Thuja gigantea* of Nuttall, as described in Carriere's recent work on *Coniferæ*, who adopts the name *gigantea*, giving *Libocedrus decurrens* as a synonym, and the following general description, in addition to a more minute one which it is unnecessary here to quote:—

THUJA GIGANTEA, (Nutt.) *Libocedrus decurrens* of several collections. "Branchlets compressed; leaves imbricated in four rows, oval acute; the marginal ones keel-shape, the front ones convex, furnished with a gland." The specimens of *Libocedrus decurrens*, now before me, agree with this.

THUJA GIGANTEA of several collections is the *Thuja Menziesii* of Douglas, adopted by Carriere with the following description:—

"Branches straight; branchlets compressed, short, straightly imbricated, destitute of glands; cones small, oval, attenuated towards both ends."

The specimen of *Thuja gigantea* now before me agrees with

this description, also adopted by Sir W. Hooker. In habit and aspect it is quite distinct from the *Librocèdrus decúrrens*, though the botanical characters may appear somewhat alike. The distinctness of these two plants is rendered still more certain from the fact that a plant of our *Librocèdrus decúrrens*, (*Th. gigánteá* of Nuttall), planted in the open ground, survived last winter without injury; while a plant of *Thùja gigánteá* (*Th. Menzièsii* of Douglas) was entirely killed within a few feet of the former.



19. YOUNG BRANCH AND CONE OF THU'JA GIGA'NTEA, (NUTT.)

As many plants of our rare California evergreens are annually exported to Europe, it is important that the identity of these noble *Arbor Vitæ*s should be clearly established. Another well known evergreen is still very imperfectly described and identified; I mean

The Siberian *Arbor Vitæ*, called by some *Waredna*, and also *Th. sibérica*, a nurseryman's name only. Relying on your anxiety to have matters of this kind made clear to the horticulturists of the country, your *Magazine* being now the only botanical medium, I am yours respectfully, R. R. S.

Nothing is more important in the introduction of the new Coniferæ, than that they should be correctly named; especially when there is such a difference in them as in the two now under notice, one of which is *hardy* and the other *tender*; and we are gratified at being enabled thus early, with the aid of our correspondent, to correct any error. That such a splendid Arbor Vitæ as the *Thuja gigánteá* should be hardy, is a great boon to planters, and that they should have the right sort, when there are two sold under the same name, is very important. The distinction above pointed out will enable most cultivators to decide whether they have the true *T. gigánteá* or not; but to enable them more completely to know this, we annex the following engraving (FIG. 19) of the young plant. It shows the peculiar erect growth of the species, which, in connection with its glaucous or bluish green appearance, will enable any one conversant with plants to decide upon its identity. *T. Craigiana* is the common name under which the true *gigánteá* of Nuttall is sold in England.

RINGING THE GRAPE VINE.

BY GEO. W. CAMPBELL, DELAWARE, O.

I READ with much interest your article in the Magazine for August, on the above subject, and think, with you, it is well worth trial upon varieties that are late ripening. I have had a little experience in this practice, a short account of which may interest some of the horticultural brotherhood. Some years ago, I "ringed" several branches of an *Isabella* vine, with a view of testing its effects. I may as well say that then, as now, I usually pruned my vines upon the long cane or renewal system, and operated on branches of the previous year's growth, which I intended to cut out at the fall pruning. I took out rings of bark from one fourth to half an inch wide, from a portion of the canes near their junction with the main stock, about the time of the setting of the fruit in the spring, leaving also a part of the canes on the same vine untouched. Soon after, the increased vigor of growth upon the ringed

portion was very apparent, and this continued throughout the season. The fruit was also larger and handsomer than that upon the rest of the vine, and ripened, as near as I can now recollect, from ten to fourteen days earlier. The canes above the rings grew to nearly double the size of the same canes below. If there was any deterioration in quality in the fruit, it was not sufficiently marked to attract my notice—having never at that time heard it suggested that this was one of the effects of ringing. During the season, nearly all the rings filled up by granulations, which formed above and below; and one very fine vigorous cane I left, when pruning in the fall, to fruit another year. Contrary, however, to my expectations, it put forth its buds very feebly the following spring, and soon after looked in such a miserable and dying condition that I cut it away. The cicatrix entirely covered the ringed portion of the cane, and was joined at its edges, but I found it had not united underneath to that portion of the stock which was denuded by ringing.

From my experience, therefore, I deduce these inferences: that “ringing” ripens the grape from ten to fourteen days before its usual season; that the size and beauty of both bunch and berry are increased; that the quality is not materially if at all injured, and that it is not advisable to operate except upon such branches as would be cut away at the fall pruning.

POMOLOGICAL GOSSIP.

THE BRITISH POMOLOGICAL SOCIETY, established a year or two ago, is doing active service in pomology in Great Britain. Meetings are held frequently, and prizes are offered for the best seedling fruits. The annual meeting of this Society was held August 5th, when several new fruits were presented, of which we copy the following report from the *Gardeners' Chronicle* :—

PEACHES.—A seedling early peach was received from Mr. Rivers of Sawbridgeworth. It is of small size, about the size

of the Acton Scot or the Early Anne; round, of a sulphur-yellow color, flushed with crimson on the side exposed to the sun, and mottled with deeper crimson. The flesh is yellow, pale pink at the stone, from which it separates freely, very tender and melting, remarkably juicy, sugary and vinous, and with a rich, delicious flavor. The stone is small, rugged and thick, and the kernel bitter. This seedling was raised from the Early York, but is said to be ten days earlier than that variety. Mr. Rivers also sent specimens of the Early Anne, grown in an orchard house under similar circumstances, but it was very much inferior in flavor. Mr. Rivers also sent specimens of the little peach called *Petite Mignonne*, a nicely flavored early variety. Mr. Edmonds of Chiswick brought a specimen of the Kew Early Purple peach. This is what is known also by the name of *Royal Charlotte*. The fruit was ripened against a wall, in the open air, and was perfectly matured; but the flesh was dry, and neither sugary nor vinous.

NECTARINE.—Mr. Rivers exhibited specimens of his seedling from the Stanwick nectarine, and it was found to maintain the same excellent properties as last year.

APRICOTS.—Mr. James Veitch of Exeter sent specimens of three varieties of Syrian apricots, all of which have sweet kernels. One of them, called the *Kaisha* apricot, has for some years been in cultivation. The fruit of this variety, as exhibited, was small, uneven in its outline, and depressed on the apex; it has a deep wavy furrow on one side, which extends from the base to the apex; the skin is yellow, with orange cloudings, and the flesh, which separates freely from the stone, is, in those specimens not highly ripened, mealy and pasty, but in those which have russet markings on the skin, and which appear to be highly ripened, it is much more juicy and highly flavored; but, altogether, it is an inferior variety to the *Moorpark*. No. 24, seedling apricot, is of the size and shape of the *Kaisha*, and very similar to it in flavor, but perhaps hardly so good. No. 27, seedling, is a most delicious variety, and, when a little shrivelled, is a perfect sweet-meat. The fruit is somewhat oval in shape, $1\frac{3}{4}$ inches long and $1\frac{1}{2}$ inches wide. It is marked on one side by a shallow

suture, and it is slightly hollowed at the apex. The skin is primrose yellow in the shade, but as it becomes highly matured, and where it is exposed to the sun, it assumes an orange tinge, and speckled with crimson on the sunward side. The flesh parts freely from the stone, and is of a deep orange color and gelatinous appearance; remarkably melting and juicy, sweet and richly flavored. Mr. Veitch stated, in a communication, that he has several standards of this variety in the open ground, with several dozens of fruit on them, but not yet ripe.

GRAPES.—Mr. Paul of Cheshunt sent bunches of a variety of Sweetwater grape, called *Froc la Boulay*, and which is recommended by the French as the best variety for out-door cultivation. These were grown in an ordinary greenhouse, and were very similar, if not identical, with a variety known as the *Prolific Sweetwater*. Mr. Lane of Berkhamstead sent a bunch of *Wilmott's Muscat Muscadine* and of *White Frontignan* for comparison. The bunches and berries are exactly alike, and both have the same musky flavor; but it was thought by some that *Wilmott's Muscadine* was rather firmer in the flesh than the other. Mr. Wighton of Cossey Hall, near Norwich, sent a bunch of a seedling black grape, which was thought to possess considerable merit. It is supposed to be a seedling between the *Black Hamburg* and *Black Prince*, and is considered by Mr. Wighton to be well adapted for a late-house vinery, as it is an excellent keeper, and not so thick-skinned as some other late varieties; the leaves die off red, and the plant has the peculiar habit of showing fruit at the fourth or fifth joints. It was the opinion of the meeting that this is an excellent variety, and Mr. Wighton was requested to send it again about Christmas, so that the Society might judge of its keeping properties. Mr. W. Watt, gardener to Sir Thomas Whichcote, Bart., Answarby Park, near Folkingham, Lincolnshire, sent three varieties of grapes, brought from the north of Spain twelve months ago. No. 1, said to be "one of the best Spanish dessert varieties, frequently met with at the tables of the great, and much esteemed for its musky flavor," proved to be *Grizzly Frontignan*. No. 2 is a peculiar looking variety. The stalk of

the bunch and the berries are of a pale rose or flesh color, and covered with a delicate bloom. The berries are about medium size, and round, the skin remarkably thin, the flesh firm, and, though very sweet, not highly or pleasantly flavored; the flavor rather mawkish for want of acid. No. 3 is said to be "a vineyard variety highly esteemed, and, though not a large bunch, the plant is an abundant bearer." This was considered a much superior variety to No. 2. The berries are round and of a greenish color, and possess very excellent flavor; the flesh is much more melting, and does not adhere so closely to the skin as in the other variety. If well grown, this will prove an excellent grape, rich in flavor; and perhaps, if, as is stated, it is an abundant bearer, will prove a valuable variety for pot culture.

PLUMS.—Mr. Lane of Berkhamstead exhibited, in a pot, a plant of *Prunus myrobalana* (the Myrobalan, or Cherry plum), which was literally studded with fruit. It was a beautiful object, the bright cornelian fruit contrasting pleasingly with the dark green foliage; a more ornamental plant could hardly be conceived. Mr. Rivers exhibited a dish of his Early Prolific plum, which was quite ripe.

MELONS.—Mr. Robert Elphinstone of Flixton Hall sent a specimen of his Hybrid, upon which the Society gave a high opinion last year, but the fruit on this occasion was not in condition. He also sent a new variety, raised from a cross between his Hybrid and Trentham Hybrid, but this also was not in condition. Mr. J. Pottle of the Grove, Little Bealing, near Woodbridge, sent a specimen of a new variety of melon raised by himself. It belongs to the round class, and is white and netted. The skin is remarkably thin, the flesh very melting, and the flavor excellent. The Society considered it a variety of great excellence.

MULBERRY.—Mr. James Veitch of Exeter exhibited fruit of a new White mulberry, with the following remark: "This is the first year of fruiting the Syrian Sweet White mulberry, which is against an east wall. The foliage is very fine, and, as a standard, it makes a very ornamental tree, worth cultivation even if it never bore fruit." The fruit, as exhibited, is as large as the common Black mulberry, but is pearly

white, and the taste is perfectly sweet. If allowed to hang, this would dry and become a sweetmeat, as it does in Syria.

APPLES.—Mr. Turner of Slough brought some of Lord Suffield apple, a variety grown in the midland counties, and which is said to be an excellent bearer, and one of the best culinary apples. Mr. Sclater of Exeter sent a seedling apple, very highly colored, and covered with a beautiful bloom, which appears to be a good early kitchen apple. Mr. Rivers brought specimens of Early Harvest, the best of all the early dessert varieties. Mr. Wighton of Cossey Hall sent specimens of two varieties found in the Norwich markets, under the names of Margaret and Maid's Legs.

NEW ENGLAND SHRUBS.

BY WILSON FLAGG.

THE SUMACHS.

THE sumachs are a remarkable family of shrubs, having considerable beauty, and exhibiting many of the traits of tropical plants, in their pinnate foliage, in the exuberant growth of the recent shoots, and distinguished likewise by their milky, resinous, and sometimes poisonous sap. They are mostly natives of warm climates; and even those which are found in temperate latitudes probably originated in the tropics at some remote period of time, and have spread themselves upwards, from some peculiar tenacity of life in all situations. They may have been originally transplanted here, like the *Ailanthus*, which is a tree of a warm climate. From the rapidity of growth of this tree and its evident ability to endure the cold of our severest winters without injury, it is destined, I should judge, to be eventually naturalized in this country, and may be, in less than a century, as common as the sumachs. The sumachs are abundant in China and Japan, and the Cape of Good Hope. From this point they seem to have taken a leap over the continents of Africa and Europe, and transplanted themselves in the United States.

There are about six species of sumach in the New England States, the most remarkable of which is the Stag-horn sumach, (*Rhus typhinum*.) This name is applied to it on account of the resemblance of its crooked branches, at their terminations, to a stag's horn. This shrub rises to the dignity of a tree in favorable situations, and might easily be made to assume this character, when under cultivation, by removing all its suckers. Although its branches are crooked and irregular, it is, when in foliage, a very neat and beautiful shrub, having large pinnate leaves which assume tints of the brightest scarlet in the autumn. These colors are preceded by the conspicuous conical bunches of fruit, of crimson and purple.

This shrub is a valuable ornament in those situations in which the whole ground may be occupied by it; for its habit of growth is in clumps, that gradually spread from the roots over a considerable extent of surface. Indeed, I can easily imagine that in this manner the species might have propagated itself all the way from Florida to New England, in the course of a few centuries. So prone is this shrub to throw out suckers from the roots, that if it be introduced into one's enclosures it will soon, with its progeny, monopolize the whole ground. Before the fruit of this species of sumach is developed, it bears a striking resemblance to the *Ailanthus*, which has the same disagreeable habit of spreading by the roots. The juice of the stem of the Stag-horn sumach will raise blisters on the skin, whence we may infer that it contains some of the poisonous qualities belonging to other species.

The Smooth sumach (*R. glabra*) is a smaller shrub than the preceding, averaging four or five feet in height, and is one of the most common species in the borders of dry fields and by old road sides. In general appearance it resembles the *R. typhinum*, but has smooth glossy leaves, while those of the other species are rough. This also bears a bunch of velvety, crimson fruit which is intensely sour. An acid not to be distinguished from citric acid is prepared from its berries, as well as from those of the Mountain sumach, (*R. capullina*), which closely resembles the Smooth sumach. Both of these species are very ornamental to the barren hill-sides, when the leaves are crimsoned in the autumn.

The Fragrant sumach (*R. aromatica*), though cultivated in Europe for the agreeable odor of its leaves, is very rare and but little known. It is found in the western part of Massachusetts.

One of the most interesting of our native sumachs, and one that contributes more than most persons are aware to the beauty of the fields, by climbing over old walls and fences and festooning with its ternate foliage the trunks of old trees and the sides of half-dilapidated buildings, is the Poison Ivy, (*Rhus radicans*.) Its habits are very similar to those of the Virginia Creeper, (*Ampelopsis*), though it seems to have more tenacity and to fasten itself more permanently to the objects it embraces. It seems to be almost parasitic in its habits; though I believe a branch will not survive the severing of the connection between it and the root. The numerous radicles with which it penetrates the surface of trees and fences, seem adapted only to support, not to nourish the plant.

I regard this as one of the most beautiful woody vines among our indigenous plants. Some may be inclined to give their preference to the creeper; but the foliage of the creeper is not so elegant, nor does it invest the object on which it clammers with so close and compact a mass of foliage. It would be hardly advisable, however, to encourage its growth, on account of the liability of many persons to be injuriously affected by contact with it, though it possesses these noxious properties in a less degree than the poison dogwood. The leaves are in threes, and by this arrangement are readily distinguished from those of the creeper, which are in fives. So small is the danger from this plant that I should never advise one to destroy it in a favorable spot, when the different objects were festooned with its beautiful green foliage.

We come lastly to the Bohon Upas of our own land, the Poison Dogwood, (*Rhus venenata*.) This is confessedly a very dangerous plant, and is allied to the *Icica heptaphylla*, from which the celebrated Wourali poison is made by the natives of Guiana. The Japanese manufacture their celebrated Japan varnish from a variety of this species, which some botanists consider identical with it. The poisonous properties of the sap are said to be evaporated by boiling.

Hence the danger of being exposed to its fumes when it is burned with other brush.

The poison dogwood is remarkable for its elegance. It is very slender and prim in its growth, and attracts attention by its want of similarity to any other plant that grows near it. The main stem and principal branches are of an ashen gray color, while the recent shoots are of a fine purple, the same hue extending to the leaf stems. The leaves are finely pinnate and regular, and of a bright green with purple veins. The flowers are greenish, inconspicuous and without any beauty. It is found in low and boggy situations, seldom or never in dry places where the other species are found.

There are many singular circumstances attending the poisonous influence of this plant. While some are affected with dangerous swellings and inflammation, after slight exposure to it, others may handle it, breathe its burning fumes, and chew it with impunity. Some are rendered more susceptible of its influence after being once poisoned; others, after being often affected by it in their youth, outgrow their susceptibility, and may afterwards handle the plant without injury. I think, however, that the forest must be full of antidotes to its poisonous effects, and this I infer from the fact that those persons who spend much of their time in the woods are rendered unsusceptible of injury from it. It affects most powerfully those individuals who are confined to town, and who are somewhat sedentary in their habits. Woodcutters and botanists seldom suffer from exposure to this plant.

FLORICULTURAL NOTICES.

THE NEW GLADIOLI.—We make no excuse for bringing again to the notice of amateur cultivators of fine flowers the new Gladioli, of more recent introduction to our gardens. All the varieties are very fine, but the newer ones are superlatively beautiful, vying in brilliancy with the finest sorts of the ramòsus tribe, and combining some of the most unique tints in the same flowers. A bed of some eighty kinds has

been gay with their tall spikes of flowers since the first of August. Of the easiest cultivation, they combine an unusual share of beauty, and must become, as they deserve to be, one of the most favorite garden flowers.

PHYGE'LIIUS CAPE'NSIS.—This new plant promises to become as useful and ornamental a bedder as the *Salvia*. Quite contrary to our expectations from the experience of last year, it has bloomed, and is still in bloom, notwithstanding the very cool weather, covered with its large branching panicles of scarlet, tubular blossoms. Treated like the *Salvia*, and transplanted to the border in May, it will form one of the most showy, late blooming garden plants. It should be extensively cultivated.

RONDELET'IA ANO'MALA.—This is another new introduction, whose beauty was not discovered until the present season. Last year young plants were found very shy of bloom, but wintered in the greenhouse without any particular care, and, turned out into the border in June, the same plants have flowered very freely, and still display their deep orange colored blossoms in little heads or trusses. The foliage is neat and the habit good. We can commend it to all who appreciate brilliant colored flowers.

TRITO'MIA UVA'RIA.—A new plant, of whose habit we know but little, but which is spoken of in the English journals as a "most remarkable feature of the garden," throwing up from fifty to seventy stems of orange scarlet flowers, set off by the ample grass-like foliage from which they rise. It has flowered in the collection of Mr. E. S. Rand of Dedham, and is likely to prove a valuable acquisition. At Kew gardens it has been one of the most showy and attractive plants.

DATU'RA WRIGHTII.—We are pleased to see that this fine annual, which we recently figured as *D. metaloides*, following the French botanists, is known in England as *D. Wrightii*—in reality its true name, and the one we shall adopt. A writer in the *Gardeners' Chronicle* calls attention to it as a splendid annual,—a magnificent thing and a free bloomer, which it truly is. It is now displaying an abundance of its large trumpet-shaped blossoms.

421. *ILEX CORNU'TA Lindl.* HORNED-LEAVED HOLLY. (Ilicineæ.) China.

A half hardy or hardy shrub ; growing six feet high ; with white flowers ; appearing in spring ; increased by layers ; grown in good garden soil. Bot. Mag., 1858, pl. 5059.

An extremely handsome leaved species, found by Mr. Fortune in Northern China, somewhere in the vicinity of Shang-hae. The leaves are from two to four inches long, very firm, coriaceous and glossy, dark blackish green above ; the general outline is broad oblong, truncated at the base and apex with three prominent spines, one of which turns downward, and the two outer ones stand out horizontally like horns. The flowers are white. It promises to be hardy in England, and, coming from Northern China, may prove hardy in our climate. Its great beauty as an evergreen deserves the trial. (*Bot. Mag.*, July.)

422. *RHODO'DENDRON VIRGA'TUM Hook. fil.* TWIGGY RHODODENDRON. (Ericaceæ.) Sikkim Himalaya.

A half hardy species ; growing two feet high ; with pink flowers ; appearing in spring ; increased by layers and grafting ; grown in peat and sand. Bot. Mag., 1858, pl. 5060.

A small flowered species from Sikkim Himalaya, where it was found in the skirts of pine forests in ravines, at elevations of 8000 to 9000 feet. It was raised from seeds sent to Mr. Nuttall, and flowered in a cool frame in April. It is a pretty dwarf species, suited to greenhouse or frame culture. The leaves are small like an azalea. (*Bot. Mag.*, July.)

423. *INDIGO'FERA DECO'RA Lindl.* COMELY INDIGO PLANT. (Leguminosæ.)

A greenhouse plant ; growing six feet high ; with pink and rose colored flowers ; appearing in spring ; increased by cuttings ; grown in leaf mould, loam and peat. Bot. Mag., 1858, pl. 5063.

A recent addition to our collections, but rarely grown in the perfection to which it will attain under proper treatment. Dr. Hooker calls it a "most lovely and ornamental greenhouse plant, by no means so generally seen in our collections as it deserves to be." It is a native of China, and was sent to England by Mr. Fortune. It has delicate green acacia-like leaves, and bears a profusion of long, erect racemes of pink and rose colored blossoms. It is stated that it does best trailed against the wall or on a rafter, treated as a half climber.—(*Bot. Mag.*, July.)

424. *POLYGONA'TUM PUNCTA'TUM* Royle. SPOTTED-STALKED
SOLOMON'S SEAL. (*Smilacineæ*.) Sikkim.

A hardy plant; growing two feet high; with greenish white flowers; appearing in spring; increased by division of the roots; grown in common garden soil. *Bot. Mag.*, 1858, pl. 5061.

Another pretty species of the Solomon's Seal, found by Dr. Wallich in Nepal, and by Dr. Hooker in Sikkim, in very elevated places. It was sent home to Mr. Nuttall, by Mr. Booth, and flowered in the open ground, at his place at Nutgrove, in April last. It is undoubtedly quite hardy. (*Bot. Mag.*, July)

425. *THYRSACA'NTHUS I'NDICUS* Nees. INDIAN THYRSACAN-
THUS. (*Acanthaceæ*.) Khasya.

A stove plant; growing one foot high; with white flowers; appearing in spring; increased by cuttings; grown in leaf mould, peat and sand. *Bot. Mag.*, 1858, pl. 5062.

Not so showy as some of the species, but forming a pretty addition to the stove, producing spikes of white flowers which appear in April and May. Its habit is similar to the other species. It was sent home by Mr. Booth, and flowered with Mr. Nuttall last April. (*Bot. Mag.*, July.)

General Notices.

CHINESE YAM.—The Chinese Yam has now been tested sufficiently to enable us to form a judgment as to its true economical value. Many excellent results were obtained last year in various parts of the country, and gardeners begin to understand the nature of this strange production—for that may surely be called strange which grows “heels upwards;” whose apex is 20 times bigger than its base; and which, although provided for the food of man, naturally grows in the ground in such a way as to make it impossible for him to pull it up. It is now, too, agreed that the quality of the root, when properly cooked, is excellent; as was practically shown last spring by a well-known gardener, who ate himself what had been grown for his employer's friends.

When first introduced to Europe by the French this esculent was regarded as a mere curiosity, and maltreated accordingly. But eventually such information concerning it was obtained from M. de Montigny, French consul at Shanghai, as led to its receiving the attention due to a root which might some day be found good to eat. The history of the early proceedings with the Yam has formerly been given in our columns at such length as to render it needless to revert to details of that kind. Our present purpose is to say what it has now become.

The herbage of the Chinese Yam is singularly like that of *Tamus communis*, the common Black Bryony of this country ; consisting of long, weak, angular, wiry, annual stems, covered with heart-shaped shining leaves. In this country it begins to push its roots as soon as the ground temperature rises to about 50°, which near London corresponds with the beginning of May. Shortly afterwards the shoots appear and soon spread over the surface, not, however, with much vigor at first, nor, indeed, till the month of August. The plant is evidently occupied for some weeks in making these true roots and preparing for the singular development of that false root, which is the Yam itself—the part to be eaten. When the roots and stems have attained the necessary vigor, which seems to be in August, when the ground has become heated up to 60°, or thereabouts, there appears from among the roots a soft fleshy horn, which directs itself perpendicularly *downwards*, and grows with considerable rapidity. Always advancing downwards this horn soon becomes a club-shaped body, the small end of which is next the surface of the ground, and the large end perpendicularly beneath. This manner of growth, exactly like that of the Arrow-root plant, *Maranta arundinacea*, continues until the end of October, when it ceases. At that time the Yam is completed, and under proper treatment will have attained the length of from 15 to 24 inches, weighing about 1 lb. In France specimens have been dug up weighing 2½ lbs., and measuring a yard in length. In its perfect state it resembles a very long trumpet gourd, or we might rather say a large parsnip, with the crown downwards and the tail upwards. This tail, which forms one-third of the length, is cut off and divided into inch-lengths for propagation ; the thicker part is eaten. In the course of its downward growth the power of development is so great that the thick end will force its way into hard clay, and even bury stones or fragments of pottery in its substance if its progress is sufficiently opposed. Obstacles of the kind ought, however, to be carefully removed.

It has been always stated that the best results in the cultivation of this Yam have been obtained where the temperature has been highest, and that the first object of the gardener should be to obtain all that sun heat can give him ; the next point was to provide soil pierceable to the depth of 3 feet. We have nevertheless seen with amazement a gardener of prodigious reputation as a "thorough practical man" trying to grow the plant in a damp low border facing the west, without the slightest preparation of the soil. His very workmen laughed at him ; there was not a young man learning his business in the garden who would have made such a display of incapacity.

In order to secure a combination of the two conditions referred to it is necessary that the plant should be grown in ridges, made if possible to run east and west ; and these ridges should rise fully 18 inches above the level of the ground around them, unless the soil is liable to become too dry. The earth itself should have been trenched 3 feet from the crown of the ridge, or be open to that depth, and should be in excellent heart. We doubt greatly whether the Yam will be worth growing in poor, or run out land, any more than among stones. One merit that it has consists in

this that, like the potato, if everything is properly prepared, it wants no further care until the time has come to take it up. Sets are formed as we have already stated by cutting the narrow neck into pieces an inch or two long, and merely require to be put in 2 or 3 inches deep; the ripe Yams are dug without difficulty by opening one end of the ridge, and working forwards, as in taking up celery.

The fitness of the plant for garden purposes is now incontestable; and we are glad to be able to add that means now exist of attempting to improve its qualities, by rendering it more hardy, or more productive. We are informed by M. Duchartre, in a paper recently read before the Horticultural Society of Paris, that among some Yams sent by M. De Montigny from China to the Imperial nursery of Algeria, a female made its appearance. All the others had proved males. Ripe seeds were produced by the female; other females were raised in Paris from the Algerine seeds; and they too have seeded, so that we now possess the usual means of operating experimentally upon the Chinese stranger. It appears certain that this Yam is one of the plants that, like the potato and the turnip, are prone to alter their habits under the influence of domestication. We therefore trust that our skilful breeders will immediately take it in hand. They cannot undertake a task more likely to abound in great results.—(*Gard. Chron.*, 1858, p. 683.)

BEES AND THEIR ABODES.—These having lately formed topics in your columns, perhaps a few hints from an apiarian of some years' duration may not be unacceptable. Equally with others I can say that I have not derived the expected profit from Nutt's hive, and, having conned over Marriot's long list, I am convinced that a good servicable article on the humane principle still remains to be produced. Though in a thatched repository I have lost repeatedly stocks from Nutt's hive, once or twice leaving much honey behind; I have this year a swarm in a hive of my own invention; how far it will answer remains to be proved. I think, in order to prevent swarming, the slides should be opened quite early in the season, say March; I have, however, known bees, when the slide was not opened, enter a side box left casually half an inch apart from the centre. This must have been after the swarming time, or when some obstacle to swarming occurred. In my opinion, bees only show common sense in preferring to swarm for the chance of some hollow tree, with only one opening, instead of risking themselves and treasures where there are innumerable holes open (for what they know) to any insect or any degree of cold; conscious of their sensitiveness to cold, they know that they can easily reduce any excessive heat, either by fanning (which is perhaps an agreeable exercise, seeing they do it when they are pleased), or by laying outside, as they do occasionally all night. I am, however, in favor of wood, as giving them less trouble and us more facility in their management, and I do not see why it should not be made equally impervious with straw to atmospheric changes. The late weather has been unkindly, both to fruit, flowers and bees; my own have hardly dared to visit lime trees in full bloom not one hundred yards off; of course

on such occasions they should be fed. The food I prefer is brown sugar just moistened with honey kneaded up like dough, with a pinch of salt and a few straws on the top; they eat the whole, and probably the exertion is a useful excitement. In defiance of all injunctions to the contrary, I feed at the entrance, in a zinc tray with a long movable handle, because I think it disturbs them less, and the food is easier found; in other parts they sometimes do not hit upon it. The bees enter below the feeder into the centre of the hive, by which plan everything adverse is prevented; in summer the feeder is turned upside down, thereby shortening the entrance hall; if I happen to have no honey, I moisten the sugar with the least drop of water. I think bees should be fed nearly all the year; this will save their honey in ungenial weather, and the food will be despised when it is propitious. Under my glasses I put a piece of common hat-box, strengthened beneath with thick letter or foolscap paper pasted on, if the paper is above the bees will eat it off; this greatly facilitates their removal. My method of returning swarms to hives is perhaps peculiar; about sunset I dash the swarm out on the lawn, and as the bees crawl about, having a tumbler ready, I pop it on the queen the instant I see her, then introducing a bit of glass, thin wood or slate beneath, carry her off. Should I not find her that night, I leave the swarm on the grass, and the next morning resume the search, the bees being then quite torpid; the hot sun restores them, and they fly home. In hiving swarms, I avoid if possible shaking them in, as it irritates them uselessly; using a lopping shears and a help to hold the branch, it is laid on the grass, and the hive placed over it, and this as soon as possible is put in its appointed place.—(*Gard. Chron.*, 1858, p. 557.)

SOUTH AFRICAN PLANTS.—We congratulate the cultivators of South African plants on the appointment of a Colonial botanist at the Cape of Good Hope. The local parliament has, with wise liberality, granted a salary of £400 per annum, and Sir George Grey has just appointed Dr. Louis Pappe of Cape Town to the post. Dr. Pappe has been long favorably known to European botanists as an active collector and accurate observer of South African plants, and is the possessor of a rich Cape herbarium. He has recently published a useful Medical Flora for the Cape, and a treatise on South African ferns. We trust that his present appointment may be the means, not only of restoring to our gardens many curious succulents formerly introduced by Masson, Niven and Bowie, and now lost in this country, but also may greatly extend our knowledge of the botanical riches of Africa. Dr. Pappe, we understand, is preparing to undertake an extensive botanical tour in the Cape colony.—(*Ibid.*, p. 668.)

THE REASON WHY SEEDS DO NOT GROW.—The following letter has been received from an indignant amateur. "How, Mr. Editor, any one can have the effrontery to send out such rubbish as I have this spring received under the name of seeds and plants from Messrs. A. & Co. of Z., I cannot conceive. I had a large packet of flower seeds of different kinds, and not a quarter would grow. I had some dozen roses, trees and low ones,

and many of them are just as they were last November, except that they then had life without leaves, and now they have neither life nor leaves."—Our impatient correspondent then proceeds to recount some other horticultural misfortunes, ending with a general condemnation of every body in what is called "the trade."

Let us hope for the forgiveness of our indignant friend if we venture to suggest that the fault may possibly lie at his own door, as it most certainly does at that of many others who indulge in similar declamation. Of Messrs. A. & Co. of Z. indeed, and of their seeds and plants, we have no personal knowledge, but we must be permitted to say that the character of the firm in question places it above all suspicion of unfair dealing; and if our correspondent is not mistaken in his facts the blame must be laid upon accident not upon design. A little consideration will show him that an old established house would not be likely to risk its reputation for the sake of saving a few shillings by selling him the trash he talks of.

That seeds continually refuse to grow is notorious; but it is equally certain that many persons calling themselves gardeners have no idea how seeds should be raised. Accustomed to "putting into the ground" peas and beans, and radish, and mustard and cress, they fancy themselves acquainted with seed sowing in general, and when they fail the blame is laid not upon their ignorance but upon the seedsman who supplies their masters. Undoubtedly the complaint that lettuce seed and onion seed will not grow, should very often be "that a man does not know how to sow lettuce seed and onion seed." An example or two, about which there can be no mistake, will explain our meaning. Two years ago some seeds sent from India to a great garden near London, where any degree of skill ought to have been found, were partly sown and reported on as "bad, will not grow." This year what remained of the original seed, although so much older, was again sown and it grew freely. Why was this?—the explanation is simple—the gardener had been changed.

In the year 1856 a large quantity of gynierum seed was distributed among the Fellows of the Horticultural Society. Many of our readers probably know that their packets produced nothing; many others also know that their gardeners raised the plant in plenty. We know that at Chiswick the young plants came up as thick as hairs. Was this because some seeds were good and others bad? Certainly not; they all belonged to the same parcel. The difference arose out of the different degree of skill possessed by gardeners. Such complaints are perennial; and we quite believe that in 19 cases out of 20 they arise from the same cause. In fact all careful seeds-men make a practice of themselves "trying" their seeds before they are sold. This process consists in sowing 100 seeds in a garden pot, and observing how many grow when properly treated. Many pots of each sample being subjected to trial, an average per centage is obtained. Nothing can be more conclusive as to the goodness of such seeds, and yet they are pronounced worthless by buyers.

The truth is, and we must tell it, there are numerous gardeners as well as amateurs all over the country who have no idea what to do with seeds

when they get them. Of this a notable instance occurred some 30 years ago. A gentleman having given a cone of a new pine tree to his gardener with orders to raise it, upon inquiring some months afterwards how many plants had come up, was told that none had been raised. "That is very extraordinary, for my neighbor, Mr. H—, has plenty of seedlings, and they are now potted off. Let me see what you have done." Imagine the surprise of the gentleman when upon examining the seedpot he found that his gardener had *sown the cone*! This happened thirty years ago, but we fear it is still possible to find people who would sow a pine cone.

Nothing indeed is more barbarous than the way in which seeds are sometimes treated. Some are overwhelmed with earth, others are scattered on the surface; some are allowed to lie in a puddle; some are placed where no rain can reach them; slugs are allowed to devour some, birds are permitted to feast upon others. Tender seeds are sown when the earth is hardly thawed, a very common case. A so-called gardener has been known to sow Kidney beans in wet heavy clay land in the month of February, in order, as he said, "to get them early." In all these cases the seeds are found to be in fault, and the blame is most unreasonably thrown upon the seedsman. We would suggest to our indignant correspondent that it may be as well to inquire whether any of these ingenious methods of destroying vegetable life has been practised in his own case.

But he also complains that his roses have died. We make the same complaint; our newly planted roses, as well as other things, have also been pleased to depart this life in greater numbers than usual. But against what does our complaint lie? Against those who sold them? Certainly not; they were some of the greatest rose growers in England. Our complaint is against no one. Whatever amount of care may be taken, newly-planted roses are very apt to die after such a season as has passed; death overtakes roses, as he does ourselves, no one knows why. We further complain of ourselves for having bought, experimentally, a cheap lot, which like other cheap things proved to be expensive; for the proportion of deaths is highest among it.

Since then our correspondent has done us the honor to consult us respecting his misfortunes, and since we have not been favored with either his name or residence, let us hope that after this little public explanation he will be less ready to believe that he has been cheated because his seeds and plants refuse to grow.—(*Gard. Chron.*, 1858, p. 524.)

KEEPING GRAPES TILL JANUARY.—"Why does my neighbor make his grapes hang till the end of January while mine are mouldy in December?" No question is more frequently put to us, and we therefore anticipate the inquiries of the approaching season. It must be owned that if grapes are more valuable at one time than another that time is the Christmas holidays, when all who have the means are eager to show their friends some hospitality. And it is provoking to find that the beautiful bunches of grapes which in November promised to decorate many a Christmas dessert are all shrivelling, and blue with mouldiness, when they are really wanted. That some

persons do not sustain an inconvenience of this kind is well known, and their neighbors wonder at a success which no pains of their own will secure—pains, alas, that have only one fault, that of misdirection. Grapes are ripened well and then protected by a care which defeats itself. The vinery is shut up close to keep out damp! fires are lighted to complete the ripening, and greenhouse plants are brought in to participate in the shelter.

These are the provisions made for safety; they are in reality the conditions of destruction.

When grapes are perfectly well ripened they contain within themselves the elements of preservation in a variable degree. Fleshy sweet berries, such as Muscats, have the greatest tendency to remain unchanged; juicy subacid sorts, like Black Hamburgs and Sweetwaters, on the contrary have the least. The difference appears to depend upon the proportion of sugar they respectively form: the sweetest grapes keep best, the most acid worst. In either case dampness promotes decay, dryness arrests it. There is no doubt that by a very skilful management of warm dry air raisins might be prepared from Sweetwater grapes as they now are from Muscats. But in a country like England, with the atmosphere always containing so much water suspended in the form of invisible vapor, some precautions must be taken to deprive the air of its moisture as far as practicable. The question is, what are those precautions?

Merely to shut up a vinery is to do nothing, or worse than nothing. Air is not the less damp when enclosed between brick walls and a glass roof. As it was when shut up so it remains, changed by nothing except the addition of more damp air by the indraught through door, roof and ventilators. Plants brought in for shelter contribute nothing to dryness; on the contrary the perspiration of their leaves very sensibly diminishes it. Moreover, during the cold nights of December, the aqueous vapor of the house, itself a most formidable enemy, condenses on the glass roof, and becoming absolute water drips upon the bunches; whereupon the stalks of the berries soon become brown and dead, mould-funguses instantly invade the bunches, and corruption spreads among them. Yet this is the common practice with those who mismanage the vineries of amateurs.

What ought to be done is this. The grapes being ripe the inside of the vinery should be made as dry as possible by the constant admission of dry warm air whenever the mid-day is warm and sunny; and it should be still further dried in damp weather by slightly heating the flues or hot-water pipes. It is not a bad plan indeed to open all the ventilators for a few days, a brisk heat being maintained at the same time. In this manner the floor, walls, and other objects will be sufficiently deprived of their moisture by the rapid passage of air in consequence of the inequality of temperature between the interior and exterior of the house. At no time, under any pretence, ought water to be admitted.

Good gardeners know this, but amateurs do not. In Spain, where the finest dried grapes in the world are prepared, it is found by experience that if ever so little dew falls on the grapes while drying, although they are sweet fleshy Muscats, the raisins are apt to spoil when packed in boxes.

Dryness of the air, and as much ventilation as it is possible to give, are the conditions to be secured if ripe grapes are to be kept long during winter.

But something more may be done. If grapes may be ruined by moisture falling on their surface, their preservation may be rendered more difficult by the introduction of superfluous moisture into their interior. We must not imagine that vines are incapable of attracting dampness from the soil when grapes are ripe. On the contrary, so long as grapes are alive, that is to say so long as their stalks are green, they imbibe sap from the branches, the branches replace their loss by sucking the stem, and the stem replenishes itself from watery matter which roots collect out of the soil. The only way to mitigate this evil is to keep the borders also dry. When a vinery is surrounded by hard gravel walks under which the vine roots lie, the casing of gravel, sun-baked during the autumn, keeps off water for a month or two till the cohesion of its particles is destroyed by a thaw; and by that time, in this country, grapes generally cease to be much wanted. But when, as is most common, vine borders consist of soft naked soil, they soon become filled with moisture if exposed to the weather. At the same time the temperature of the soil has not fallen low enough to render roots absolutely torpid. Last December the ordinary soil of a garden stood at two feet below the surface at 48° near London, and must have been 50° in a warm vine border, which is about the ground temperature at which the vine commences its spring growth in this country. Under such circumstances roots in full action will absorb water with some force, and this must indirectly tell upon grapes and diminish the chances of making them keep. The obvious remedy is to keep the vine border also dry. There are various modes of effecting this object. The surface of the vine border may be permanently concreted in the manner suggested by Mr. Spencer of Bowood; or it may be covered by a wooden roof, as others have proposed. The simplest and cheapest contrivance is that used at Heckfield, the seat of Lord Evereley, where there is one of the best managed great gardens in the kingdom. Here the vine borders are furnished with long movable frames, constructed of slight quartering, roughly knocked together and covered with asphalte. Each cover being as long as the vine border is broad, the latter is effectually guarded from rain whenever the covers are put on.—This is done only in wet or very cold weather. At all other times the covers are lifted off and placed aside, an operation which their lightness and portability renders perfectly easy. Of course these covers are not intended merely for autumn service; they also guard the borders from the bad effects of cold rain or melted snow or frosty weather when the vines are in growth in the spring; and should be provided whenever fine grapes are wanted.—(*Gard. Chron.*, 1858, p. 668.)

POTTING PLANTS.—At first sight nothing appears easier than to pot a plant. It must be held perpendicularly, have the roots spread out a little, be surrounded with mould, pressed down and watered. There! the work is done, and we have only to wait till nature coöperates with our efforts, makes the plant to grow, and rewards our exertions with fine flowers. But

stop a little. Nature does indeed work with us; but then we must not have everything our own way. We must study her laws and suit our movements to her wishes, or she will assert her power, and disappoint all our expectations. Men sow seed in the ground and nature will work with them; but then they must consider the circumstances of soil, season and climate. So, when an amateur gardener, whether lady or gentleman, undertakes to pot a plant, the question must be asked, What are the natural conditions on which successful pot culture depends?

There is a wonderful power in vegetable life, as in the economy of sentient animals, of adapting itself to untoward circumstances. The child will grow, and often be healthy, when brought up in a badly ventilated alley; and we have seen badly potted plants flourish in spite of the violence done to their nature in the operation. But the rule is, that for a plant to grow well in a pot, it must be potted in a certain way, and that way we shall now attempt to point out. What we have to furnish to the plant in its confined position are soil of a nutritive quality, air and moisture; and it is plain that there is more difficulty in supplying these just in proportion to the diminutive size of the pot. In the open border roots can travel a good distance in search of appropriate food, and the mass of earth being large, it is subjected more fully to the atmosphere, and retains moisture longer; but in pots all these natural advantages are lessened, for there can be but a small portion of soil, and it is difficult to hold the balance true between too much wet and the dryness which an exposure to the air on all sides must occasion. All these inconveniences are, however, very easily overcome by a little patient management.

As to soil, whatever may be the character of it demanded by particular tribes of plants, it should always be used in as large and rough a state as possible, in order that the soluble portions may not run through the pot, but be presented to the roots for the longest period. Thus, turfy loam is good for roses, but it should not be sifted, but used in lumps from half an inch to an inch square. Balsams flourish in leaf-mould, but it should not be pulverized, but employed with the fibrous matter as entire as possible. So with all other soils—the aim must be to obviate the tendency of the water applied to the pots to carry the nutritive matter downward, and this is accomplished by attending to what we have just advised. For general use we keep a compost of the following kind: The seakale beds are always covered in winter with leaves, grass, and other vegetable refuse, and in the spring this is cleared off and put into a heap. By the next year it is in fine working condition. We have also a heap of turfy soil, taken, with the turf on, from an old pasture, and this is kept a year before using. Rotten manure from a cucumber frame, and white sand, complete our list of the rough constituents of our potting soil, and the mixture is made according to the habits and requirements of the plants to be potted. We never sift this, but merely throw out lumps which are too large. An amateur may do almost anything if he has a supply of these materials always at hand.

The other conditions of air and moisture are attained by an efficient system of drainage, on which indeed the success of pot cultivation mainly

depends. Water must be often applied, and yet, unless it passes through freely, the soil will become stagnant and heavy, and unfit for healthy vegetable life. The subject of drainage is so well treated in Dr. Lindley's *Theory of Horticulture* (1855, p. 438), that we cannot improve upon it by any words of our own, and shall therefore quote a passage.

"The ordinary way of putting at the bottom of the pot a large quantity of crocks is but a clumsy proceeding, and one which, if it affords an opportunity for roots to spread themselves freely, affords also a harbor for worms, slugs, woodlice, and other vermin. To remedy this I put at the bottom a piece of perforated zinc, an inch and a quarter, or more, square, according to the size of the pot, so as completely to cover the hole; this may be had for a trifle of any brasier or tin-plate worker, and may, by the help of a strong pair of scissors or small shears, be readily cut to the requisite size. Upon this I place a small potsherd, with its convex side upwards, taking care that by resting partly upon the zinc it renders it immovable. I then put in a quantity of good moss, so as to form a layer of a third of an inch or more thick, when pressed together by the mould, and then proceed to finish as usual the operation of potting the plant. I have found this method to succeed perfectly—constant drainage is effected; the moss, particularly with the addition of the potsherd, prevents the earth from choking the sides of the zinc, and, by partial decomposition where it is in contact with the soil, affords an agreeable receptacle for the roots of the plants, in which they appear to delight. All sorts of vermin are excluded; the operation of shifting is facilitated, as the earth comes out of the pot unbroken; and it is moreover a much more cleanly process than the one commonly used."

Let us add, that we always use moss at the top of the crocks to prevent the light soil being carried through to the shelves of the greenhouse—an inconvenience much felt by the ordinary method.—(*Gard. Chron.*, p. 556.)

Societies.

AMERICAN POMOLOGICAL.

The seventh meeting of this Society was held in Mozart Hall, New York, on Friday, the 14th of September, and continued three days.

The President, the Hon. M. P. Wilder, took the chair, and, after the reception of the credentials of the delegates from various societies, proceeded to deliver his address.

Mr. Wilder congratulated the members upon the meeting of the seventh session, and, after noticing the effect that the organization of this society had had in the formation of similar societies in Europe, and the great importance of its transactions in our own country, proceeded to discuss the profits of pear culture, following this with an interesting sketch of the progress of horticultural science the past two years. He next pictured the

pleasures arising from gardening pursuits, and concluded his very interesting address, which we have only space to notice, by resigning his position as president.

Mr. T. W. Field of New York, however, offered a resolution prevailing upon him to retain it for another term.

After a recess of an hour, the Society elected the following gentlemen as its officers for the two years to come:—

President—The Hon. Marshall P. Wilder of Massachusetts.

Vice-Presidents—One from each State and Territory.

Secretary—Thomas W. Field, Brooklyn, N. Y.

Treasurer—Thomas P. James, Philadelphia, Pa.

Executive Committee—The President and Vice-Presidents ex-officio; W. D. Brincklé, M. D., Philadelphia, Pa.; T. W. Field, Brooklyn, N. Y.; M. B. Bateham, Columbus, Ohio; L. E. Berckmans, Plainfield, N. J.; F. K. Phoenix, Bloomington, Ill.

General Chairman of the State Fruit Committees—S. Walker, Roxbury, Ma.

The meeting then took up the business before it, the first being the discussion of fruits, and the addition of such varieties to the list for "general cultivation" as deserved to be placed there. Three days were consumed in this labor, besides the reception and reading of various reports. As these were interesting, we shall improve the earliest opportunity, after the proceedings are published, to give a digest of the same.

The meeting adjourned on Friday, the 17th, to meet in Philadelphia in 1860.

There was a better display of fruit than the Society has ever made, from the following contributors:—

The Hon. Marshall P. Wilder of Boston exhibited 144 varieties of pears. Messrs. Ellwanger & Barry of Rochester, 200 varieties of pears and 37 of plums. Hovey & Co., Boston, 150 varieties of pears. Hon. Samuel Walker, Roxbury, 140 varieties of pears.

William Reid of Elizabeth, N. J., 104 varieties of pears. William L. Ferris of Throg's Neck, 55 varieties of pears. Sheldon Moore, Kensington, Conn., 5 varieties of pears. E. M. Warren, Chelmsford, Mass., 8 varieties Summer and Fall sweet apples, 10 Fall and Winter sweet apples, 24 Fall and Winter sour apples, 30 Early and Summer sour apples. Messrs. Thorp, Smith & Hanchett, Syracuse, 124 varieties of pears. J. D. Ingersoll, Illion, Herkimer County, N. Y., Delaware and Logan grapes, 1 unknown. Dr. J. F. Boynton, Syracuse, 14 varieties of pears. T. T. Lyon, Plymouth, Mich., 27 varieties of pears and apples. W. H. Mitchell, Harlem, 13 varieties of pears and 14 varieties of apples. C. H. Moore, New York, 1 seedling pear. E. W. Sylvester, Lyons, N. Y., 3 varieties of pears.

Prof. Mapes, 13 varieties of pears. Messrs. Westbrook & Mendenhall, Greensboro', N. C., 77 varieties of apples and 13 varieties of pears. John G. Bergen, Brooklyn, 40 specimens of the Island pear (a new variety), 20 specimens of the Bergen pear, and 12 specimens of the Englebert Lott. James M. Paul, North Adams, Mass., 20 varieties of apples and 10 varieties of pears. S. P. Carpenter, New Rochelle, 3 new varieties of pear, origi-

nating in Westchester County. E. G. Studley, Claverack, Columbia County, 10 varieties of apples. W. P. Townshend, Lockport, N. Y., 38 varieties of pears. Joshua Pierce, Washington, D. C., 5 enormous Hunter melons, 18 to 22 inches long. Charles Downing of Newburgh, and Dr. Grant of Iona Island, exhibit very fine specimens of the Delaware, Anna and Catawba grapes.

Massachusetts Horticultural Society.

Saturday, Sept. 4, 1858 — Exhibited. **FLOWERS:** From Jona. French, 70 vars. of verbenas, stocks and asters. From J. Breck & Son, verbenas in variety, and fine phloxes. From J. Nugent, 40 vars. of verbenas. From G. G. Hubbard, asters, dahlias, verbenas, &c. From W. H. Spooner, 30 vars. of German asters.

From Hovey & Co., 125 vars. of verbenas, including Etonian, Lord Macaulay, and Earl of Shaftsbury, new ones of 1858, of remarkable beauty; also 50 varieties of Pompon, Perfection, Pæony, Pyramidal, Quilled, Bouquet, chrysanthemum flowered and imbricated asters, stocks, new gladiolus, petunias, Japan lilies, &c.—a magnificent display. From A. Apple, 50 varieties verbenas, stocks, roses, asters, &c. From F. Winship, asters, stocks and cut flowers. From W. C. Strong, roses, Weigelia amabilis, 59 vars. of verbenas, asters and cut flowers. Asters, verbenas, and cut flowers were also sent by Barnes & Washburn, M. Trautman, T. W. Walker, T. G. Whytal, J. Kelly and others.

Some seedling verbenas were exhibited; among others, one from J. Kelly, called *Pride of Belmont*, white; but none were considered of sufficient merit to obtain the prize of the silver medal.

AWARD OF PREMIUMS AND GRATUITIES.

ASTERS.—For the best 30 flowers, to Hovey & Co., \$5.

For the next best, to J. Breck & Co., \$4.

For the next best, to Barnes & Washburn, \$3.

For the next best, to W. C. Strong, \$2.

STOCKS.—For the best, to Hovey & Co., \$5.

For the next best, to F. Winship, \$3.

For the next best, to A. Apple, \$2.

VERBENAS.—For the best, to W. C. Strong, \$4.

For the next best, to A. Apple, \$3.

For the next, to Hovey & Co., \$2.

GRATUITIES.—To F. Winship, J. Nugent, J. French, W. H. Spooner, M. Trautman, T. W. Walker, and G. G. Hubbard, \$1 for asters.

To W. Heustis, for a display of roses, \$2.

To J. French, for stocks, \$1.

To J. French, J. Nugent, Barnes & Washburn, J. Breck & Son, T. G. Whytal, and G. G. Hubbard, \$1 each for verbenas.

FRUITS: From J. F. Allen, Manning's Elizabeth and Bartlett pears, and grapes. J. Nugent and G. Merriam sent Dorchester blackberries. From Hovey & Co., Boston and St. Menin pears. From T. Clapp, Gravenstein and Early Strawberry apples, very fine. Benoni apples from E. M. Richards, and Foster apples from J. W. Foster. From H. Vandine, 20 vars. of plums, and Muskingum pears. Very fine Bartlett pears from J. B. Loomis and J. F. Pond.

PREMIUMS AWARDED FOR FRUITS.

SUMMER APPLES.—For the best, to Hovey & Co., for Early Bough, \$5.

For the next best, to G. B. Cutter, for Williams, \$3.

SUMMER PEARS.—For the best, to M. P. Wilder, for Bloodgood, \$5.

For the next, to Hovey & Co., for St. Menin, \$3.

CURRENTS.—For the best, to M. P. Wilder, for La Versaillaise, \$3.

For the next, to J. Nugent, for Red Dutch, \$2.

GOOSEBERRIES.—For the best, to T. Mitchell, \$4.

For the next, to A. D. Webber, \$2.

RASPBERRIES.—For the best, to W. R. Austin, for Knevet's Giant, \$5.

For the next, to W. H. Barnes, the same, \$4.

For the next, to J. W. Foster, the same, \$3.

BLACKBERRIES.—For the best, to J. Nugent, for the Dorchester, \$5.

For the next, to G. Merriam, the same, \$4.

For the next, to L. Jennings, Jr., for Lawton, \$3.

For the next, to C. E. Crant, Dorchester, \$2.

THE THIRTIETH ANNUAL EXHIBITION OF THE SOCIETY was held in the Society's Hall, School Street, on the 21st, 22d, 23d and 24th of September. The Society, in the early part of the season, concluded to hold the exhibition in their own Hall the present year, and on account of the limited room compared with the Music Hall, where it has been held for three or four years, made their arrangements to correspond with the space. No plants in pots, with one or two exceptions—no designs, and only a limited quantity of cut flowers, were exhibited. The fruits were confined to the collections mostly for which prizes were offered, which alone nearly or quite filled the tables.

Notwithstanding the very limited space, the exhibition was a very fine one. The pears and apples were extremely large and handsome, and as they were nearly all offered for competition, they comprised only the very best specimens. So many superior fruits brought together made a magnificent display. Such fine Flemish Beauty, Bartlett, Seckel, Sheldon, Swan's Orange, Beurré Superfin, Lawrence, Andrews, Beurré Bosc and other pears, and Gravenstein, Northern Spy, and some other apples, were never before seen. The grapes were few and not very remarkable; the Muscat of Alexandria and Barbarossa being the exceptions. Plums and peaches were poor. We annex a brief report of the exhibition.

PLANTS IN POTS.—These were only the Gloxinias and Achimenes for which prizes were offered, a collection of ferns, a Cissus discolor, and a bamboo, all from the collection of Messrs. Hovey & Co. The achimenes were immense specimens, some in tubs two feet in diameter. The

ferns comprised handsome plants of *Gymnogramma*, *Lycopodium umbratum*, &c. The *Cissus* was a superb specimen, trained in the form of a vase. *Bambusa metake*, the new hardy bamboo, will prove a great acquisition to our ornamental foliaged plants.

BOUQUETS.—These were two very large ones for the Bradlee vases from Hovey & Co., composed mostly of Japan lilies and Gladioli; two for the Jones vases, from J. Nugent; also, parlor, mantel, and hand bouquets from Messrs. Wilder, Rand, Trautman and others.

CUT FLOWERS.—These, though not in so large quantity as heretofore, were unusually select and fine. Messrs. Breck & Son had fine asters, Gladioli, annuals, phloxes, verbenas, &c. Messrs. Hovey & Co., Japan lilies, some new Gladioli, asters, verbenas, phloxes, achimenes, gloxinias, dahlias, lantanas, roses, and a variety of annuals. Messrs. Copeland, Rand, Apple, G. G. Hubbard, W. C. Strong, F. Winship, Underwood and others also contributed a handsome variety of flowers.

The following is the award of premiums:—

PREMIUMS AND GRATUITIES AWARDED FOR PLANTS, BOUQUETS, ETC.

ACHIMENES.—For the best six, to Hovey & Co., \$6.

GLOXINIAS.—For the best six, to Hovey & Co., \$6.

LARGE BOUQUETS.—For the best pair for the Bradlee vases, to Hovey & Co., \$10.

For the best pair for the Jones vases, to J. Nugent, \$10.

PARLOR BOUQUETS.—For the best pair, to J. Nugent, \$8.

For the next, to E. S. Rand, Jr., \$7.

For the next, to A. Apple, \$6.

For the next, to M. Trautman, \$5.

For the next, to M. P. Wilder, \$4.

For the next, to L. Davenport, \$3.

MANTLE BOUQUETS.—For the best pair, to W. E. Carter, \$5.

For the next, to E. S. Rand, Jr., \$4.

HAND BOUQUETS.—For the best four, to M. Trautman, \$5.

For the next, to L. Davenport, \$4.

For the next, to E. S. Rand, Jr., \$3.

CUT FLOWERS.—For the best display, to Hovey & Co., \$15.

For the next, to J. Breck & Son, \$12.

For the next, to Antane Apple, \$10.

For the next, to W. C. Strong, \$8.

For the next, to E. S. Rand, \$6.

GRATUITIES.—For Large Bouquets, to T. G. Whytal, \$5.

For Parlor Bouquets, to J. Breck & Son, \$3.

For Cut Flowers, to C. Copeland, \$3; to F. Winship, \$3; to G. G. Hubbard, \$2; to W. J. Underwood, \$1; to M. Trautman, \$1.

For Coxcombs, to T. W. Walker, \$2.

For *Cissus discolor* and Display, to Hovey & Co., \$5.

For Cone work, to Mrs. J. Mann, the Society's silver medal.

For Wax Flowers, to Miss Capen, the bronze medal.

For Wreath, to Mrs. Wm. Kenrick, \$4.

For Floral Vase, to Mrs. A. Pierce, \$3.

FRUIT: From the President of the Society, twenty varieties of pears—among them very fine *Beurré Clairgeau*. From J. S. Cabot, twenty vars. of pears.

From Hovey & Co., fifty varieties of pears—among which were *Beurré Kennes*, *Gerando*, *Alexandrina*, *Grand Soliel*, *Kingsessing*, *Beurré Nantais*, *Bergamot*, *Leseble*, *Des Chasseurs*, &c.

From M. P. Wilder, fifty varieties of pears, including *Paul Theliena*, *Mad. Eliza*, *Beurré Antoine*, *B. Montefontaine*, *Willermoz*, *Colmar d'Aout*, *Brailmont*, &c.

From S. Walker, fifty varieties of pears, comprising *Neumasons*, *Alex. Lambre*, *Doyenné Robin*, *Kingsessing*, &c.

F. Dana, A. Low, R. Manning, R. W. Ames, W. A. Craft, A. D. Williams, G. Evers, A. Parker, W. Bacon, J. A. Stetson, G. G. Hubbard and John Gordon each contributed ten var. of pears. E. Wight, thirteen var. of apples. H. Vandine, eight var. of pears and four of plums. Mrs. S. W. Cole, pears and apples. S. Sweetser, five var. of pears. C. E. Grant, fine *Isabella* grapes. Mrs. F. B. Durfee, Fall River, grapes in variety, very fine, particularly the *Muscats*. J. Breck & Son, grapes. J. W. Garcia, Roxbury, pears. N. Harris, plums, pears and peaches in variety. W. R. Austin, eight var. of pears. J. Stone & Sons, apples. L. Davenport, apples. J. A. Kenrick, apples and pears. Mrs. C. Hancock, Boston, four var. pears. Messrs. Burr, ten var. apples. N. White, Quincy, six var. pears. P. G. Hardwick, Quincy, pears. N. H. White, Quincy, apples and pears. J. H. Chadwick, fifteen var. pears. E. F. Fay, Chelsea, pears.

From G. Evers, ten var. apples, and three for a name. J. Newhall, apples and figs. F. Dana, four var. peaches, two of grapes. J. G. Ball, Boston, apples. H. H. Chamberlain, pears. J. Mason, Cambridgeport, Bartlett pears. Mrs. Valentine, Cambridgeport, eight var. pears. A. D. Williams, ten var. apples. H. S. Mansfield, Blackstone, fine display of twelve var. grapes. F. Winship, pears. B. Hastings, Concord, apples. J. B. Loomis, Chelsea, pears. G. G. Hubbard, Cambridge, five var. apples. J. Gordon, eleven var. apples, and green flesh melon. B. Harrington, apples and pears. A. S. Dean, Roxbury, pears. C. Blanchard, apples. J. Vickery, apples. R. S. Rogers, Salem, Black *Barbarossa* grapes. H. Dutch, Chelsea, pears. Mrs. R. V. Thompson, Boston, plums. C. Dimmick, Somerville, pears and peaches. J. W. Foster, apples. A. Parker, apples.

From S. Lane, *Flemish Beauty* pears. J. Eaton, Cambridge, four var. pears. J. Haley, three varieties pears. J. H. Billings, *Doyenné Boussock* pears. J. Nudd, Cambridge, Bartlett pears. H. B. Phelps, *Isabella* grapes. Dr. A. Lodge, Swampscot, four var. pears. Wm. H. Palmer, Roxbury, five var. pears. Wm. Bacon, four boxes plums. B. Hastings, Concord, Northern Spy apples. Dr. H. Adams, Adams pears. Rev. T. D. Anderson, *Beurré Bosc* and *Seckel* pears. C. C. Sampson, Chelsea, *Flemish Beauty* pears. J. W. Manning, *Diana* grapes. J. Palsy, Roxbury, three var. pears. B. D. Emerson, Jamaica Plain, Black *Hamburgh* and *White*

Chasselas grapes. J. A. Stetson, Quincy, ten var. apples. T. Waterman, Diana, Catawba, and Breck grapes. L. Wheeler, Cambridge, pears. Jas. Eustis, twelve var. apples.

From Dr. C. W. Grant, Iona, N. Y., Delaware and Diana grapes. From Wm. Brooksbanks, Rebecca grapes. Other contributions of fruits were made, but owing to the lateness of the month we have not the time to enumerate them. The above comprises the principal exhibitors.

PREMIUMS AND GRATUITIES FOR FRUITS.

APPLES.—For the best ten varieties, twelve specimens, to T. Clapp, \$20.

For the next, to J. A. Stetson, \$15.

For the next, to Messrs. Burr, \$12.

For the best eight varieties, twelve specimens, to J. Gordon, \$15.

For the next, to J. W. Foster, \$12.

For the next, to J. Lovett, \$8.

For the best five varieties, to G. G. Hubbard, \$10.

For the next, to G. Evers, \$8.

For the best three varieties, to E. Wight, \$8.

For the best variety, twelve specimens, to T. Clapp, for Gravenstein, \$5.

For the next, to N. H. White, for Hubbardston Nonsuch, \$4.

For the next, to G. Evers, for the Northern Spy, \$3.

For the next, to S. Walker, for Gravenstein, \$2.

PEARS.—For the best ten varieties, to M. P. Wilder, the Lyman plate, valued at \$20.

For the next, to J. Gordon, \$15.

For the next, to Hovey & Co., \$12.

For the best eight varieties, twelve specimens, to W. R. Austin, \$15.

For the next, to H. Vandine, \$12.

For the next, to P. R. L. Stone, \$8.

For the best five varieties, twelve specimens, to J. H. Chadwick, \$10.

For the next, to N. White, \$8.

For the next, to T. Clapp, \$6.

For the best three varieties, twelve specimens, to J. Eaton, \$8.

For the next, to J. Haley, \$5.

For the best variety, twelve specimens, to J. Eaton, Flemish Beauty, \$5.

For the next, to W. R. Austin, Louise Bonne of Jersey, \$4.

For the next, to J. Gordon, Beurré Bosc, \$3.

For the next, to R. W. Ames, Duchesse, \$2.

GRAPES.—For the best five varieties, to Mrs. F. B. Durfee, \$10.

For the next, to J. Breck, \$8.

For the third best, to C. S. Holbrook, \$6.

For the second best two varieties, to B. D. Emerson, \$4.

For the best collection, to H. S. Mansfield, \$10.

For the best specimens of Native grapes, to C. E. Grant, Isabella, \$5.

For the next, to G. B. Cutter, \$4.

PEACHES.—For the best, to T. Clapp, \$5.

For the next, to F. Dana, \$4.

PLUMS.—For the best, to H. Vandine, \$5.

For the next, to Wm. Bacon, \$4.

GRATUITIES.—To S. Walker, W. Bacon and A. Low, \$10 each for ten varieties of pears.

To R. W. Ames and J. A. Stetson, for ten varieties of pears, \$5 each.

To Mrs. C. Hancock for Bartlett, J. H. Chadwick for Seckel, and F. Winship for Doyenné Boussock pears, \$2 each.

VEGETABLES.—The show of vegetables, though good, did not compare with the variety of last year. The squashes were excellent, considering the cool season, and some fine Hubbards were sent by Mr. Gregory of Marblehead. We also noticed the Wilder, Acorn, Custard and others. Messrs. Burr made a most interesting contribution of sixty varieties of beans, comprising the principal sorts known in seedsmen's catalogues.—They were neatly put up in small boxes, and carefully labelled with the name and the habit, whether dwarf or running. It added greatly to the interest of this department. We annex the awards.

PREMIUMS AND GRATUITIES FOR VEGETABLES.

BEST DISPLAY.—For the best display and greatest variety, to S. A. Merrill, \$15.

For the next, to J. Stone & Sons, \$10.

For the next, to G. G. Hubbard, \$8.

For the next, to G. R. Sampson, \$6.

For the next, to I. P. Rand, \$4.

CAULIFLOWERS.—For the best, not less than three heads, to A. Parker, \$4.

For the next, to S. A. Merrill, \$3.

For the next, to G. R. Sampson, \$1.

CABBAGES.—For the best, not less than three heads, to S. A. Merrill, \$4.

For the next, to A. Parker, \$3.

For the next, to G. R. Sampson, \$1.

MUSKMELON.—For the best Christiana or Greenflesh, to J. Gordon, \$3.

For the next, to G. R. Sampson, \$2.

For the next, to L. Davenport, \$1.

MAMMOTH SQUASH.—For the best, to S. A. Merrill, the Society's silver medal.

For the next, to G. R. Sampson, \$3.

PUMPKINS.—For the best, to S. A. Merrill, silver medal.

For the next, to J. Stone & Sons, \$3.

GRATUITIES.—For collection, to A. Bowditch & Son, \$5; B. Harrington, \$3; A. Parker, A. D. Webber and G. N. Nichols, each \$2 publication.

For Hubbard Squashes, to J. J. H. Gregory, \$2 publication.

For collection, to J. Stickney, \$2.

For truss of yellow corn, to C. French, \$2 publication.

To W. C. Strong, Messrs. Burr, Wm. Bacon, L. Davenport, J. Nugent, T. W. Walker, F. Dana, and Oakman & Elredge, \$1 each.

Horticultural Operations

FOR OCTOBER.

FRUIT DEPARTMENT.

STILL, cool and moist has been September, the latter part accompanied with slight frosts much earlier than usual. Since 1835 so early a frost has not been experienced around Boston. After such a cool and wet summer, we cannot but anticipate a warm and dry autumn. Already trees show a better ripened wood than last year, and with two weeks of good weather they would be well prepared for the winter. With October more active duties commence; ground intended for planting should be immediately got ready, and as soon as the leaves will shake off they may be removed.

GRAPE VINES now at work in the earliest houses will require attention. Keep up a good temperature by the aid of light fires, increasing it as the vines advance towards blooming: stop the laterals as soon as their length will admit. Vines in the grapery will need no other care than abundance of air to ripen the wood. In the greenhouse all superfluous green wood may be cut away to admit light and warmth. Vines in cold houses should have close attention; air freely in good weather, as well ripened wood is the main thing in successful grape culture. Vines in pots for forcing should be removed to a cool shed on the approach of severe frosty nights, but should be kept out as long as possible.

PEACH TREES in pots should have a warm sunny situation to ripen the wood.

FIG TREES, with their young fruit just set, should not be allowed to see a heavy frost, as they will be likely to lose their crop: remove to a warm shed.

FRUIT TREES of all kinds may be transplanted after the 20th.

CURRENTS and **GOOSEBERRIES** may be successfully transplanted.

STRAWBERRY BEDS should be looked to occasionally, as the plants will still be making a growth.

THE CANKER WORM GRUBS often make their appearance the last of the month, and, if they should be seen, tar, or some of the newer compounds, should be ready for them.

FLOWER DEPARTMENT.

The unusual early frosts have reminded the careful gardener of the necessity of housing his plants, and already, all the more tender will be in their places for the winter. If they are not, no time should be lost in getting them in. All the smaller, and less hardy kinds, are yet better off in frames, such as *Verbenas*, *Scarlet Geraniums*, *Petunias*, &c., where they can be well exposed to the sun to ripen their wood, and be protected from frost at night. Keep the houses, except the stove, as cool as possible, and without fires as long as the weather will allow.

CAMELLIAS should all be neatly arranged, and have occasional syringings in good weather.

CHRYSTANTHEMUMS should have an open, airy situation, where they will display their flowers in better condition. Water freely with liquid manure.

AZALEAS should be rather sparingly watered, and have the coolest place in the house.

PELARGONIUMS should have a light, airy situation, close to the glass; any cuttings not yet potted off should be attended to.

CALCEOLARIAS, raised from seed, should be potted off.

CINERARIAS should have the same management, and plants for early flowering should be shifted into larger pots.

MONTHLY CARNATIONS should have a good situation, not too warm.

CHINESE PRIMROSES, if they require it, should be repotted. Keep them on a cool, airy shelf.

NEMOPHILAS should be repotted.

HYACINTH and other bulbs, for early flowering, may be potted now.

PANSIES may be propagated from cuttings.

BEDDING PLANTS of all kinds may yet be propagated from cuttings for a spring stock.

ACHIMENES should be cut down, and the pots placed beneath the stage.

GLOXINIAS may have the same treatment.

CACTUSES should be sparingly watered now, except the truncatum.

FUCHSIAS, done blooming, may be placed away in a dry situation, under the stage.

ROSES, in the open ground, should be taken up and potted, and have the protection of a frame till well rooted.

HEATHS may be kept in a frame for some time; if removed to the house they should have a very cool, airy situation.

LANTANAS, taken up and potted, and kept rather dry, may be wintered under the stage, where they will be free from damp.

PLANTS of all kinds, suitable for winter decoration, should be taken up and potted. Prune and tie into shape everything taken into the house.

FLOWER GARDEN AND SHRUBBERY.

Though late in the season the lawn, the walks and the flower garden should have attention; neglect now will not only cause a slovenly appearance, but increase the labor of spring work. Clean up all leaves as they fall, and remove all frost bitten foliage.

CARNATION AND **PICOTEES** layers should be transplanted to a frame, where they can be slightly protected during winter.

TULIPS, **HYACINTHS** and other hardy bulbs may be set out this month.

GLADIOLUSES should be taken up.

DAHLIAS should be taken up before severe frosts.

ORANGE GLOBE ROOTS, if taken up and stored in the cellar, bloom freely next summer.

MADEIRA VINES should be taken up early.

PANSIES may be divided and reset, and cuttings put in.

JAPAN AND OTHER **LILIES** may be reset this month.

HERBACEOUS PLANTS may be taken up and reset, or transplanted now.

SHRUBS of all kinds may be transplanted.

THE HERBACEOUS PÆONIES.

FEW if any hardy flowering plants excel in splendor the Pæony. The rose, with its varied tints, its exquisite form, and delightful fragrance, is unsurpassed; but for mere splendor alone, it cannot excel the Pæony in its present improved state. So little does the magnificence of this flower appear to be appreciated, and so little are its numerous varieties generally known, that we make no apology for devoting this article to some account of them, trusting it may be the means of awakening a new interest in their culture, and aid in introducing them more generally to the notice of all who admire brilliant flowers. We do this partly in accordance with a recent request of our friend, Prof. Kirtland, but mainly to bring it before our readers, and urge upon them its many claims to the attention of all who would add one of the easiest cultivated and most magnificent flowers to their gardens.

The double red pæony of our older gardens was for so long a time the only double variety cultivated, that many who know it well form their opinion of the merits of others from this. Though once the pride of every garden, it has lately been considered too common for a permanent place in the flower border, and from some gardens has been banished altogether; still it is a very beautiful variety, perhaps not yet excelled in color, though it has been in size and form, and it deserves a better fate than the neglect it has received. Its early blooming and its brilliant color enliven the grounds at a season when there are few other flowers. If it was a new and rare kind, it would speedily gain an entrance into every collection of handsome plants.

But as we have said, this is so generally taken as the prototype of the newer ones that they are neglected for other and far less showy plants. It is scarcely believed, by those who have not seen them, that there is such a variety of beautiful tints, from the purest white to the deepest purple. The *Whitleji*, *Humei* and *fragrans* have been looked upon as

combining all the principal colors. It is true the earlier seedlings have a similarity in appearance: great changes are not achieved at once; they must be gradual, and through the repeated process of hybridization. But, thanks to the zeal and perseverance of the French and Belgian florists, these great changes have been effected, and at the present time the pæony vies with the rose in the variety of its colors, and appears destined to surpass it. The dahlia for a long time retained its distinctness of color, till at last slight changes were produced, and speedily our gardens were filled with tipped, shaded, striped and mottled flowers. So, too, with the pæony; already some of the newest kinds have beautifully shaded blossoms, and ere long there can be little doubt of the production of other new combinations of color.

With such a variety of tints—with such a vigorous and hardy habit—displaying their blossoms so early in the season, and of such uncommon size, why should they not become the favorites of every lover of splendid flowers? Next to the rose, we know of no hardy plant so truly deserving the amateur's attention. The tulip, gorgeous though it is, requires great care in its culture, and its brilliancy lasts but a short time, while the pæony begins to bloom in May and continues in succession to July.

It is but a short time since the attention of cultivators was first given to the production of new varieties,—not more than twenty-five or thirty years, and principally within twenty years; in the latter period the French and Belgian collections have been increased from twenty to one hundred varieties, and the magnificence of some of them surpasses any description. Till within half a dozen years there has been a great want of rich dark colors; but this deficiency has been supplied by M. Parmentier, a Belgian amateur, who has devoted nearly thirty years to the improvement of this flower, never parting with a single plant till 1853. Most of his seedlings are nearly as rich in color as the old double red, and several of them of the deepest crimson purple, large, full, and extremely double; they have been remarkable acquisitions. Besides M. Parmentier, of Belgium, the principal improvers of the pæony abroad have been M. Guerin, Verdier, Lemon, Delache, and Mieliez, of France.

Our own amateurs have not, we are glad to know, overlooked the pæony. Messrs. Cabot and Putnam of Salem, and Mr. J. Richardson of Dorchester, have each raised several very beautiful flowers. Those produced by Mr. Putnam have already found their way into the trade, and though not equal to some of the newest foreign varieties, they are quite as good as the older ones. We doubt not that perseverance in the growth of seedlings would result, as it has in other plants, in the production of kinds quite equal to those of the French and Belgian florists. Careful hybridization would effect in this flower what it has in the Camellia, of which some of our American seedlings surpass all others.

It is since the publication of our last article on the pæony, in 1852, (Vol. XVIII.) that the most beautiful varieties, with a few exceptions, have been introduced. Previously the flowers did not embrace a sufficient variety of colors; there were too many light ones, and scarcely a good dark one except *Pottsi*. Of the latter description, M. Parmentier's seedlings, as we have stated, are unique; and other growers, particularly M. Verdier the elder, have also produced some fine deep colored flowers. Of the intermediate tints, such as rose, deep rose and violet rose, some very superior varieties have been obtained. All the later seedlings are of better form than the earlier ones, being more full and globular, with a good row of outer guard petals, and a well filled and rounded centre. This is the natural result of an improved taste, which progresses with the improvement effected: at first we are satisfied with novelty in color without much regard to form, as something has been achieved; but sooner or later we are not content with this alone; the next step must be improvement in form, until, after a time, some standard is established, below which none should fall deserving of cultivation. Just as a double dahlia at one time, and this not many years ago, was thought to be a wonderful flower; while at the present day, it must not only be double but must come up to that standard which has been established after many years of cultivation has shown to what perfection it could be brought.

The most beautiful form of the pæony is that of the *Festiva*,

one of the most magnificent that has ever been raised, equaling in this respect, we think, the *Festiva maxima*, though not so large and showy as the latter. This may be taken at present as the standard of form. The inner petals are of good size, cup-shaped, and the flower, when in perfection, is a perfect ball. Some flowers are filled with long, narrow, fringed petals, with a tuft in the centre; others have broader petals, and too much flattened at the top; while a third has the true anemone shape. These forms, as well as the several varieties of them, are each beautiful in their way, but not equal to that of *Festiva*, and though it may not be possible, for a long time, to produce varieties of this shape, the nearer they approach to it the higher they will be estimated by all cultivators of this beautiful flower.

We have been highly delighted the past season with the magnificent display of flowers in our collection of upwards of eighty varieties, and while in bloom we made brief descriptions of most of the more recent additions; these, with the number already described in the volume above referred to, embrace a sufficient number to make a choice selection, which cannot fail to please every amateur cultivator. As TWENTY-SIX varieties were before noticed, we commence our enumeration, for the sake of convenience, from that period:—

27. *ARSENE MEURET*, (*Verdier*).—Flowers large; outer petals good size; centre well filled, forming a good ball; color lilac violet, with the edges of the petals slightly shaded.

28. *DECAISNE*, (*Guerin*).—Flowers large; outer petals good size; centre very full and somewhat tufted; color bright reddish violet.

29. *DELACHIE*, (*Delache*).—Flowers large and very double; petals narrow; color deep purple.

30. *DOCTOR BRETONNEAU*, (*Verdier*).—Flowers large; outer petals large; centre well filled, forming a complete ball; color bright rose.

31. *ETIENNE DENNIS*, (*Verdier*).—Flowers large, of a very bright rose; centre petals long and erect. It grows very tall, and holds its blossoms erect.

32. *FLAVESCENS*, (*Guerin*).—Flowers medium size; outer petals large, of a yellowish white; those of the centre of a soft yellow. A distinct variety.

33. FRANCIS ORTEGAL, (*Purmentier*).—Flowers large; outer petals broad, in a double row; centre ones small, erect, narrow, intermixed with golden stamens; color deep rich maroon purple.

34. FESTIVA MAXIMA, (*Miellez*).—Flowers very large, globular; outer petals large; centre broad, somewhat cup-shaped, like Festiva; color pure white, with the centre petals exquisitely tinted and spotted with purple on the edges. One of the most magnificent varieties yet raised.

35. GEN. BERTRAND, (*Guerin*). Flowers large; outer petals large, of a beautiful rose; those in the centre narrow, of a clear salmon. Fine.

36. INSIGNIS, (*Guerin*).—Flowers large; petals large; color bright violet rose.

37. LUTEA PLENISSIMA, (*Buyck*). Flowers medium size; outer petals large; those of the centre erect, fimbriated, of a soft yellow, changing to clear yellow.

38. MADAME BENARD, (*Verdier*).—Flowers large; outer petals good size, and centre well filled, forming a complete ball; color beautiful pale rose or pink.

39. NE PLUS ULTRA, (*Miellez*).—Flowers very large; outer petals large; those of the centre long, narrow, erect, and little tufted; color beautiful deep pink, or pale rose. It grows very tall and erect.

40. PURPUREA SUPERBA, (*Guerin*).—Flowers large; outer petals large; centre erect and somewhat tufted; color clear deep reddish violet.

41. POITEAU, (*Guerin*).—Flowers large and full; color pale flesh, nearly white.

42. PRINCE PROSPER D'AREMBERG, (*Parmentier*).—Flowers large, with broad outer petals; centre ones smaller and erect, intermixed with a few golden stamens; color violet purple.

43. RICHARD FETTERS, (*Verdier*).—Flowers medium size; outer petals large; centre smaller, but full and globular; color rosy lilac, copper colored in the centre.

44. TRICOLOR GRANDIFLORA, (*Buyck*).—Flowers medium size; outer petals rose color, those in the centre maroon, intermixed with rose and dark salmon.

45. TRIUMPH DE PARIS, (*Guerin*).—Flowers medium size; outer petals large and white; those in the centre narrow and yellowish.

46. VIOLACEA, (*Verdier*).—Flowers large; outer petals good size; centre ones narrow, erect, and somewhat tufted; color clear violet.

47. WASHINGTON, (*Guerin*).—Flowers medium size; outer petals medium size, clear red, those in the centre narrow, clear rosy salmon.

All the above are varieties of the *sinensis*, of which *Whiteleji*, *fragrans*, &c., are examples, growing tall and generally erect, and blooming two to three weeks later than the old double red. The following are new and fine varieties of the *officinalis* and *paradoxica*, and are similar in habit to the double red, blooming early, and generally of a spreading habit:—

48. ALBA PLENA.—Flowers large, full and globular, of a pale blush, changing to white.

49. MAXIMA ROSEA PLENA.—Flowers large, double and full; color fine salmon rose.

50. ROSEA PALLIDA PLENO.—Flowers large, double and globular; color pale rose.

51. NOBLE POURPRE, (*Verdier*).—Flowers large and full; color very dark blackish purple; distinct and fine.

52. VIOLACEA PLENA.—Flowers large and full; color very dark violet.

53. VIOLACEA SPÆRICA.—Flowers large, full and globular; color deep rich violet purple.

These twenty-five varieties will make a superb addition to any collection; all are not equally beautiful and distinct, though they all have large and showy flowers. Some of them are very new, while others are older, though most of them have been brought into notice since 1852.

It is scarcely necessary to add anything to the complete details we have already given, in our volume referred to above, in regard to the cultivation and propagation of the *pæony*. We may, however, add, for the benefit of those who have not that volume at hand, that they like a deep, rich, well drained situation, and plenty of room; and with a renewal and division of the roots once in three or four years, they will give an abundance of their splendid blossoms.

HOW TO ORNAMENT A FARM.

BY WILSON FLAGG.

THE embellishment of a farm is one of the most difficult studies in the landscape art, because every appearance of an attempt of this kind mars the simplicity of a farm, and robs it of one of its principal charms. If we were to lay out a plan for this kind of ornamentation, our rules should be those of omission rather than those of performance; since the most charming places have grown out of long continued neglect, rather than out of positive attempts to improve their appearance. The most lovely farms in the country are those which have been for many generations in the possession of one family, whose members have formed attachments to certain trees and groups of trees during their early days, and have not been tempted by avarice or supposed necessity to cut them down for timber or fuel. When a farm passes into the hands of a stranger, he feels no such affection for the old trees, and, unless he be superior to his countrymen in general, he is less capable of appreciating their value as trees, than their price when cut into logs.

One of the most favorable specimens of a farm of this description is one which is widely known as the estate of Mr. William Foster, distinguished as a successful teacher of youth in Andover, in the early part of this century. It is now in the possession of his only son and heir, Wm. P. Foster, Esq., who lets it to a respectable farmer. This farm is one of those old places which has luckily never fallen into the hands of barbarians, but has for a century past been allowed to retain its principal beauties of wood, standard trees and native shrubbery, and to acquire that picturesque appearance which renders it a charming scene to all visitors.

The house is situated on a slight elevation in the valley of the Shawsheen, (spelled Shawshin by barbarians), standing about ten rods from the main road, and is approached by a lane, skirted on the west by a row of Lombardy poplars, and on the opposite side by a miscellaneous growth of trees and shrubs. The house stands at the end of this row of poplars,

and is protected on the north by a small hill, covered with a growth of locusts and white pines. It has two fronts, one looking to the east, the other to the south. Opposite the eastern front, which we first approach, is a ravine forming the bed of a stream which was never known to be dry. This stream takes its course round the house, outside of the enclosure, making an angle corresponding with the angle of the house formed by the union of the two fronts, and thence in a winding course to the river.

On the other side of the brook, opposite the eastern front of the house, rises a large sandy hill, which is covered with a growth of pitch pines and white birches, extending entirely over it, as far as the road on the eastern boundary of the estate, and to the opposite valley on the south side of the hill. This hill overlooks the ravine on the north, a wooded valley on the south, and the farm and river valley on the west. Skirting an old stone wall, on the western slope of this hill, is a lengthened group of maples, oaks, hickories and ash trees, not so closely growing but that each individual displays nearly its full proportions. As we proceed along a foot-path by the side of this stone wall, in a course that is parallel with the river, we finally descend into a level plain, through which another small trout stream passes along to the river.

On this plain is a scattered group of elms of spontaneous growth, each more than a century old, standing mostly on a line with the wall, but not with sufficient regularity to seem to have been planted there. Here and there an old apple tree stands alone upon the meadow, affording shade to the herds that are turned in there for pasture, and a miscellaneous growth of shrubbery marks the course of the stream that waters this portion of the farm. On the east of this group of elms is a sudden rise of land—a sort of ridge, crowned with a dense white pine wood, which is skirted with a growth of young birches and maples, where it unites with the plain.

Beyond this plain, on the east, is a venerable old orchard, on about two acres of land sloping gently from the eastern boundary of the farm formed by the road. The orchard stands in a vista between two wooded hills, through which is

a fine view of sunset, of the river valley, and of the elevated lands beyond. To obtain entrance to the orchard, the visitor must walk through a path leading from the one just described, commencing at the group of elms, and passing between the two hills. Another path to the orchard extends from the eastern gate in front of the house over the sandy hill on the north side of the farm, through its growth of pines and birches. This is a very pleasant walk, and terminates in a field adjoining the orchard.

The most of the tillage of this farm is in the valley of the Shawsheen, on the western side of the estate. This is a level, excepting a portion that forms a gentle slope from the hill. The brook, that passes round the house, is conducted over a considerable portion of this meadow for purposes of irrigation; and from this slope the principal part of the hay of the farm is cut. Many fine old apple trees are also scattered singly over these fields, and the river is skirted by a growth of alders, maples and swamp oaks that form a grateful shade for the path along the river side, and presents a variety of tints in the autumn.

It is not an easy task to convey to the reader's mind, without a map, a distinct idea of any locality. I select this farm as a text for my remarks, not only on account of its peculiar natural beauties, but because there are many of the readers of this magazine who, as students, have formerly been familiar with its grounds. When a farm is thus favorably situated, and has not been deprived of its straggling groups of trees, which are the most valuable trees in landscape, there is very little to be done when we attempt to beautify it; but a few general rules, which might be adopted in this place, are applicable to all others that still retain so many of their natural beauties.

I will begin with the approach to the house, and proceed to the principal paths through the ground. Though a row of thriving Lombardy poplars is far from deserving contempt, yet trees of this kind, when very old, are apt to be covered with decayed branches, and wear more of that venerable appearance which we look for in an old tree. Poplars of this species are beautiful only in their prime, and when a row of

them exhibits more signs of decay than of life, more dry sticks than leafy branches, they ought to be removed. The pleasing associations connected with old trees must in this case be sacrificed; and the sacrifice may teach us the importance of planting for shade and ornament trees of great longevity, that those who have acquired an affection for them in their youth may be saved the pain that follows their removal. There are many such old rows of Lombardy poplars, that can hardly be said to have life; and it is well to anticipate their death, and plant more valuable and long-lived trees in their places. Behind these poplars and on the hill at the north side of the house is a beautiful spontaneous growth of young white pines, extending down to the road side. Let us hope that no vandal, in the shape of a road surveyor, will ever be permitted to destroy these trees; for the first idea of improvement that would occur to one of these mathematical Bumkinets would be to cut down these pines because they are not planted in a row, and somewhat interfere with the sidewalk.

There are several large willows and balsam poplars directly opposite the house, on the other side of the carriage way, which would be in exactly the right location if the house were situated in an open plain. But when it is confined, like this, in a narrow space between two hills, all trees ought to stand at a considerable distance from it, because they add to the darkness caused by the adjoining eminences, and cut off the prospect which is already too confined. It would improve the cheerful aspect of this place, therefore, if a few of these trees were removed. One great fault with many of our country houses is, that too many trees are crowded into the space immediately around the house, while all beyond is open, bleak and bare. Trees ought never to be used to shade the house, but rather to shade its enclosures, leaving the house open to the full influence of the sun. They also serve as a more efficient protection from the winds, if they are situated a few rods from the house, than if they are closely contiguous to it.

We come next to the paths that lead through the farm. The visitor would see that there are three principal paths commencing near the house, the two outer ones diverging like the two sides of the letter V, and used as cartways, the

middle one—a footpath—taking an irregular course between them. With regard to all paths through a farm, it may be laid down as a general rule, that they ought never to be nicely trimmed. Gravel should be laid upon them, for the purpose of hardening the ground and facilitating travel; but no pains ought to be taken afterwards, as in a garden, to keep them nicely cleared of grass and weeds, and perfectly trim and smooth. After the gravel is laid, they should be left to nature, to the tread of men and animals, and to the friction of the wheels that pass over them. This neglect will cause them to assume a pleasing rustic appearance, and remind us of nature rather than of art. The only clearing that should be made is that of removing actual incumbrances to a free passage over them.

Another improvement that might be made in all such rustic paths, is the removal from their borders all actually offensive objects, such as the thorny smilax, or green briar, the high blackberry, and all other thorny plants that grow too near them. But an excess of grubbing and clearing will always reveal an attempt to beautify the grounds, which the eye of a painter or a lover of nature always abhors, as nature abhors a vacuum. I am free to confess that I can seldom bear the sight of a "model farm," with its bare walls and fences, its freedom from bushes, and its cartpaths without a single wild-flower in their borders to remind us that there is something under the blue sky besides corn and potatoes.

If there be some young forest trees of good proportions near one of these paths, and they are incumbered by others, the latter should be removed, to allow them to grow into standards. As they increase in stature, others still should be removed out of their way. By thus working with reference to the future, the beauty of the farm will be constantly improving, without creating any of those appearances which affect the spectator disagreeably by suggesting an attempt. The principal art, indeed, of landscape improvement consists in the addition of objects which will be ornamental, without seeming to be intended for ornament. This evidence of design is the principal objection to formality where irregularity is expected, and to irregularity where formality is expected,

as a straight path through uneven grounds, or a crooked path over a level. Irregular rows of trees are not disagreeable on a farm, when they follow the line of a fence or a boundary; neither are regular rows of trees disagreeable by the roadside.

DESCRIPTIONS OF SELECT VARIETIES OF PEARS.

BY THE EDITOR.

THE season, though promising well at the commencement, has not been so favorable for fruits as was anticipated. The bloom was never more abundant, but either the excessive quantity of moisture during May, or the slight frost the first week in that month, injured the blossoms to such an extent that in many localities there was not half a crop. Our own trees did much better than this, though many of the younger trees and newer varieties failed to produce much fruit. The larger and more fully grown trees bore better, and towards the top were in many instances loaded; showing, as it appears to us, pretty conclusively, that the cold had more to do with the failure of the crop than the rains, the temperature being much lower within six feet of the ground than above that height, where, with the exception of some varieties, the fruit was mostly produced.

The year has, however, enabled us to add some new varieties of good promise, which we shall improve an early opportunity in our next volume to figure and describe. We now give an account of four American varieties of great excellence.

207. BOSTON.

Pinneo, }
Hebron, } Of some collections.
Graves, }

Passing through the Quincy Hall market, in the summer of 1843, as was formerly our practice during the fruit season, to notice the various fruits which were offered for sale, we saw large quantities of what appeared to be an entirely new and fine pear. Something like the following dialogue occurred with the dealer:—

"What pear do you call this?" taking up one of the pears.

"That's the Virgalieu."

"Virgalieu! are you not mistaken; this is too early for that pear, it ripens in October." (About the 20th of August.)

"Oh no! they are real Virgalieu pears." We thought it unnecessary to argue the question.

"How do you sell them?"

"Six cents each."

Paying the amount asked we bought one of the pears and found it quite equal to the Virgalieu, and a very good substitute for it. We liked it so much that we purchased half a dozen, for which we paid twenty-five cents.

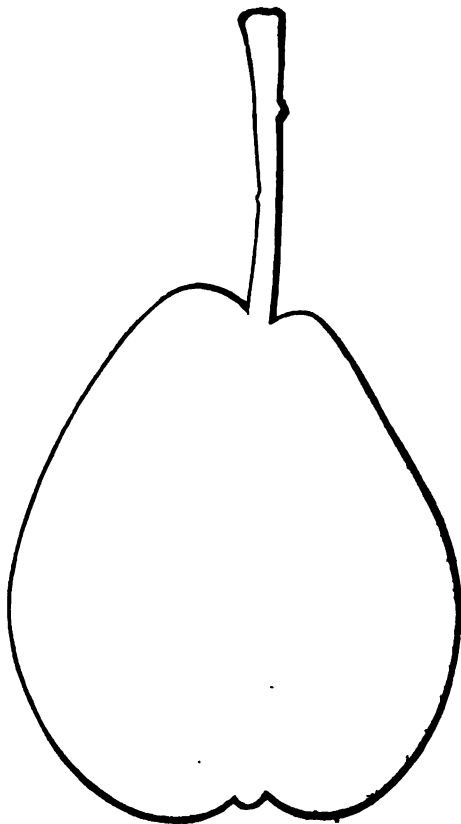
Astonished that such a superior variety should be offered in the market, we were curious to know where they came from.

"Do you know where these pears were raised?"

"No, sir! we purchased them from one of our neighbors in the market, who has a quantity for sale;" and referred us to the dealer who supplied them for further information. We lost no time in calling upon him, and were still more surprised when he showed us eight or ten barrels, which were only part of the lot he had purchased. Here we bought a dozen, for fifty cents, as we had a large quantity to select from, and the specimens were larger and finer; our drawing (FIG. 20) being made from one of these as long ago as 1848. Our first inquiry was where they were raised, and he stated that they came from Hartford, Conn. Upon further inquiry in regard to the individual who brought them to the city, he informed us he was still in town, and gave us his name. Requesting him to invite him to call in before leaving Boston, we hastened home with our pears. Here we had another trial of the ripest, and found that they improved upon acquaintance; the unripe ones we placed away in a drawer to ripen up.

The very next day the dealer who brought the pears to Boston called upon us, and gave us a full account of the pear, so far as he was able then to do. He stated that the trees from which the pears were gathered grew in Columbia, Conn.; that there were a number of them, large trees which bore abundant crops; that he had sold the pears for some years, first in Hartford, then, we believe in New York, and finally in

Boston; the price he obtained in the latter city being much greater than he could get elsewhere. Of the particular history of the variety he could not give us any information, but kindly offered to inquire and inform us, as well as procure scions which he would bring to us on his next visit to Boston.



20. THE BOSTON PEAR.

Late in the autumn of the same year, Mr. Burdick, for this was the person's name, brought us a bundle of scions which he cut with his own hands from the tree. He also gave us, agreeably to his promise, all the information he could procure in regard to the origin of the pear. This was as follows: That the original tree was found in the woods in Columbia, Conn., by Mr. Abbott's grandfather, who took it up and

set it out in his garden some fifty or sixty years ago ; that the trees bear every year abundantly, most of them being old ; no young ones among them.

• He further stated that the pear had no name, and was not known by any where they grew, and for want of one he called it the Virgalieu. For six or eight years Mr. Burdick continued to send the pears to the Boston market, where they always found a ready sale. Up to 1850, we purchased them nearly every year, and always found them of the same uniform excellence, surpassing altogether any summer variety then known, as it does still, although we have the Brandywine, Beurré Giffart, and others, introduced since we first became acquainted with the Boston.

The pears, we had nearly forgot to say, which we laid away to ripen, matured in the highest perfection ; they became, as this variety always does, of a rich deep yellow with a tinge of red in the sun, and rich fawn colored specks around the stem, which render it one of the most beautiful fruits.

In 1850 our trees first came into bearing, and proved to be the same pear Mr. Burdick had sent to Boston. Subsequently they produced more abundantly and finer specimens, when they were exhibited before the Massachusetts Horticultural Society, and were pronounced by the Fruit Committee one of the finest summer pears.

Believing that so fine a native pear without any name might most appropriately be dedicated to the city whose amateur cultivators so long and highly appreciated it, we called it the "Boston," a name now commonly known, and one which it can legitimately claim.

During the last year, some Connecticut cultivators to whom we gave specimens of the Boston for trial, compared them with a pear called Pinneo, which grows in some parts of that state, and pronounced them to be identical, and judging from the description given us of the latter pear, we should suppose they might be, though a comparison of the fruits and trees would render this more certain. And still more recently, it has been described as the Hebron, as will be seen by a reference to our pages, (p. 419.)

That the Connecticut pomologists should commit such errors seems scarcely possible, and it only shows how little they know about this pear. That a variety of so much excellence should be grown for fifty years, and in such abundance as to supply the Boston market, and yet not be known to a single nurseryman in that state, nor a single tree cultivated for sale, is more surprising still. If they are so long finding out the merits of their own seedlings, they should not be jealous of the cultivators of other states who make them known, that amateur pear growers throughout the country may add them to their collections.

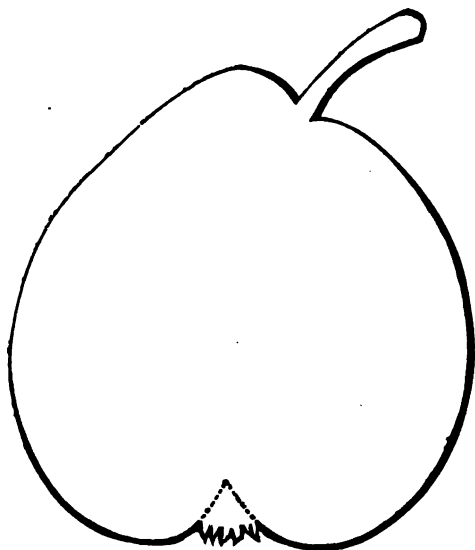
The tree is a vigorous and healthy grower, with yellowish wood, rather slow in coming into bearing, and producing its fruit on the ends of the previous year's wood, as well as upon the old spurs; on this account the new growth on young trees should not be headed in so much as many other varieties. It does not grow upon the quince. The fruit must be gathered early, at least ten days before eating; our usual period of picking is about the 15th of August. If left upon the tree too long they become mealy and insipid.

Size, medium, about two and three quarter inches long, and two and a half in diameter: *Form*, oblong obovate, largest near the middle, narrowing a little towards the eye, and tapering gradually towards the stem where it ends obtusely: *Skin*, very fair, smooth, lemon yellow when mature, with a pale tint of red on the sunny side, a large blotch of fawn-colored russet around the base of the stem radiating in irregular longitudinal streaks, and covered with minute russet specks: *Stem*, long, about one and a half inches in length, rather stout, straight, light brown, smooth, with occasional protuberances which appear like small incipient buds, and obliquely inserted under a slightly swollen lip: *Eye*, medium size, open, and moderately sunk in an irregular somewhat ribbed basin: segments of the calyx, medium size, recurved, and projecting: *Flesh*, yellowish white, fine, juicy and melting: *Flavor*, rich, sugary and brisk, with a refreshing and delicious aroma: *Core*, small: *Seeds*, large, black. Ripe from the middle of August to the tenth of September.

208. WHEELER.

In the month of August, 1851, some seedling pears were sent to the Massachusetts Horticultural Society, by Dr. Wheeler of Greenwich, R. I., who gave the following history of the variety, in a letter accompanying the fruit:—

GENTLEMEN—The accompanying is a specimen of a seedling pear, a part of which were grown in my garden, and which I beg you to present at the Horticultural Rooms, as I deem it a fruit entitled by its superior quality to more extensive notice and consequent cultivation. It fell under my notice in the



21. THE WHEELER PEAR.

autumn of 1843, during a professional visit to a very worthy maiden lady of this town, who, deeming the Doctor entitled to some of the best fruits of the land, treated me with a dish of these delicious pears. In the spring of 1844, I set some of the scions into a small scrubby tree growing wild in a meadow; and in 1846 some of the shoots grew upwards of two feet in length. In the spring of 1847 I had the tree transplanted into the farm-house garden, and in 1849 it produced some fifteen or twenty pears, all of which except two were taken by the children of my tenant. In 1850 I had it removed into

the garden where I reside, and this year it has produced about half a bushel. As the history of the seedling is interesting, I give it in nearly the words of the originator:—

“About fifteen years ago one of my neighbors gave me a Gardner pear, after eating which, I planted the core by the side of a rock in the garden, from which a single tree grew until some six or seven years ago, when I had it taken up and set where it now stands, and about five or six years ago it began to bear and has continued to bear ever since.”

The parent tree from which the pear was taken is still growing near the location of the seedling, having the appearance of some sixty years or more, producing the ordinary yield (for this region) of a few scabby, cracked, worthless pears. Had I any doubt, from a careful examination of the seedling, as to its natural state, the habits and character of the family (three maiden sisters) would preclude the possibility of its having been artificially changed. It is not a very vigorous grower, standing in an unfavorable location, being shaded by one of much larger and more vigorous growth, but it is a constant, rather prolific bearer, of large, smooth, fair, sound fruit, as you will see by the specimens, those marked S having been taken by myself from the tree, the remainder marked G growing on my own tree. This specimen is average in regard to size and quality, the one marked R being the worst my tree has matured, having a spot of rust thereon. I could have presented a much more beautiful collection, but thought an average production would best promote the object of the presentation. It is worthy of remark that the seedling tree has uniformly produced, since its first fruiting, the same quality of fruit as the specimens, while the parent tree, growing in a more favorable situation, has almost as uniformly produced abortions. Should this fruit be deemed worthy of notice I should be happy to have the report of the committee. *Respectfully, your obedient servant,* L. MARCELLUS WHEELER.

The pears were tried by the Fruit Committee and appeared to be of such good quality, that we requested Dr. Wheeler to send us a few scions that we might try it more fully. We noticed that the specimens were not in the best condition, but there was sufficient to know that the variety was one of great

excellence. Unfortunately the tree upon which we grafted the scions did not thrive well, and not coming into bearing so speedily as we expected, in 1855 we sent to Dr. Wheeler for a few fruits for further trial. These he kindly sent us and they were quite equal to the first.

This year some thrifty young trees came into bearing for the first time, and the pears, though few in number, were far better than any we had before tried; they nearly or quite equalled the Belle Lucrative, to which it bears some resemblance, both in size, color and flavor; being if anything sweeter than that fine pear, perhaps too sweet for those who relish a Brown Beurré or Beurré Superfin.

Doubting not that it will become a favorite pear, we have called it after the gentleman who has taken so much pains to introduce it to notice. The tree is a vigorous grower, upright and handsome, with deep green foliage and rather dark wood.

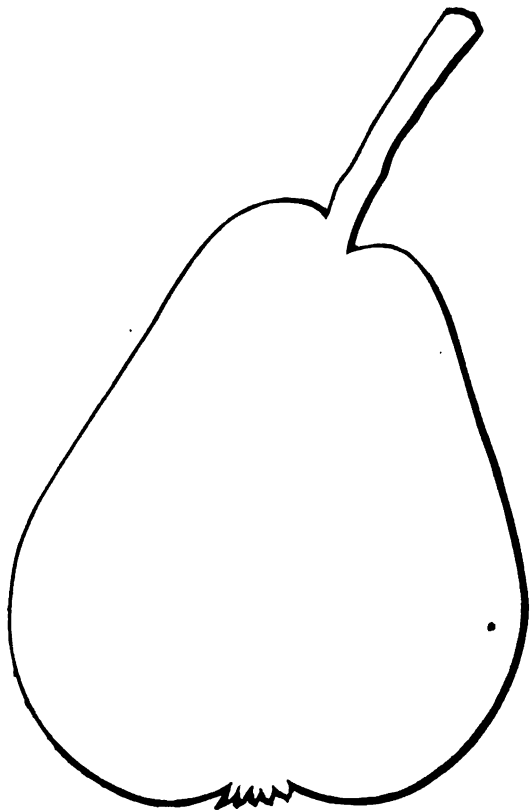
Size, medium, about two and a half inches long and two and a quarter in diameter: *Form*, roundish obovate, full at the crown, rounding off to the stem where it ends obtusely: *Skin*, fair, smooth, pale yellowish green, mottled with greenish patches and dotted with a few russet specks: *Stem*, rather short, about half an inch long, moderately stout, curved, and obliquely inserted in a small contracted cavity: *Eye*, large, open, and little depressed in a broad shallow basin; segments of the calyx, short, projecting: *Flesh*, white, coarse, melting and juicy: *Flavor*, sweet, rich, pleasantly perfumed and excellent: *Core*, medium size: *Seeds*, large. Ripe early in September.

209. BERGEN. *Downing's Fruits and Fruit Trees*, Rev. Ed.

The Bergen pear (FIG. 22) has been very recently introduced to the notice of cultivators by John G. Bergen of Brooklyn, L. I. Mr. Bergen, on a visit to us a year or two ago, spoke highly of this variety, and this year kindly gave us specimens of the fruit which he had on exhibition at the late meeting of the Pomological Society in New York. These we took home and ripened up, and found them to be so good that we avail ourselves of this early opportunity to describe

it. In a letter to us last spring Mr. Bergen gives the following history of this pear:—

“The Bergen pear is from a seedling which originated at the Narrows, Long Island, (the original tree, some thirty or forty years old, still standing.) The tree resembles in its growth the Bartlett, the fruit ripening some two or three



22. THE BERGEN PEAR.

weeks later, and like the Bartlett requires house ripening. Some specimens I had last year were larger than any Bartlett I ever grew. When exposed to the sun it reddens beautifully on one side, is a delicious sweet, with scarcely any core, and frequently without seeds.”

The Bergen is a large, handsome and excellent pear, and comes in at a very desirable season, just after the Bartlett.

Its very good qualities give it strong claims upon the attention of pomologists.

Size, large, about three and a half inches long and three in diameter: *Form*, obtuse pyramidal, large and swollen near the crown with a slight contraction in the middle, obtuse at the stem: *Skin*, fair, smooth, thin, clear green, becoming yellow at maturity, tinged with red on the sunny side, with some small scattered russet patches, and covered with russetty specks: *Stem*, long, about one and a half inches in length, stout and obliquely inserted, with scarcely any cavity, on one side of a slight projection; *Eye*, large, open and scarcely depressed in a small shallow basin; segments of the calyx, broad, short: *Flesh*, yellowish white, little coarse, melting, buttery and juicy: *Flavor*, saccharine, rich and slightly perfumed: *Core*, small: *Seeds*, medium size, short, ovate, partially abortive. Ripe in October and keeps well.

210. SHEPHERD.

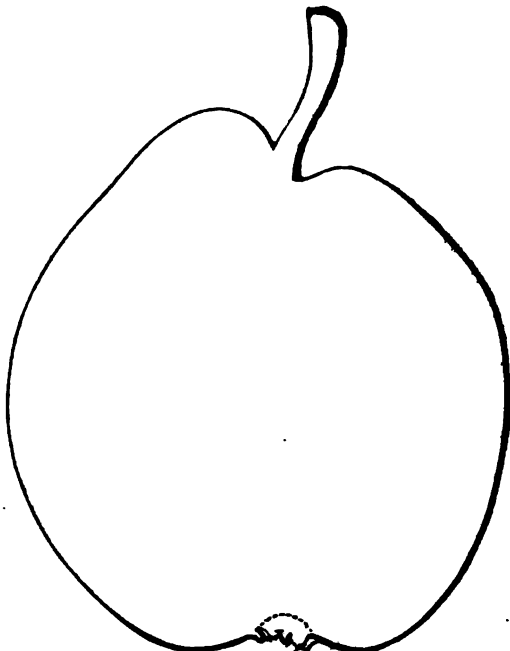
Shepherd's Seedling.

Dorchester Seedling.

The Shepherd pear (FIG. 23) is an accidental seedling found growing in Dorchester, Mass., in a garden near the Bartlett and Beurré Diel, and is supposed to be a cross between those two fine pears. In general appearance it more nearly approaches the Flemish Beauty than any other kind we can call to mind, ripens about the same season and somewhat resembles it in quality. It is a hardy and vigorous tree, and promises to be a valuable addition to our native pears.

Size, large, about three inches long, and two and three quarters in diameter: *Form*, blunt at both ends, largest about the middle, oblong ovate, swollen on one side, with a slightly uneven surface: *Skin*, fair, slightly rough, yellow at maturity, considerably traced with thin russet, tinged with blush on the sunny side, and dotted with russet specks: *Stem*, rather short, about half an inch long, not very stout, curved and inserted in a pretty deep cavity highest on one side: *Eye*, medium size, open and but little depressed in a small, very shallow basin; segments of the calyx, short, rounded: *Flesh*, yellowish white, coarse, melting and juicy: *Flavor*, rich, sweet,

sprightly, and very pleasantly perfumed: *Core*, medium size,



23. THE SHEPHERD PEAR.

little gritty: *Seeds*, small, pale brown. Ripe last of September and beginning of October.

POMOLOGICAL GOSSIP.

BAGLEY'S PERPETUAL RASPBERRY.—We have not a great deal of faith in perpetual bearing fruits of any kind—at least for our climate. We have tried many of them, and have failed to realize any very satisfactory results. Perhaps our culture has not been special enough; at any rate, under ordinary care, they have not been very satisfactory to us.

We have, however, seen some fair crops of the *Merveille* four seasons at Rochester, N. Y., and specimens of the *Catawissa* exhibited bearing considerable fruit, but neither of them would compare, for size and fullness of the berry as well

as good flavor, with Bagley's Perpetual, specimens of which were exhibited at the meeting of the Pomological Society in New York, in September. These, at least, appeared to possess much merit, and if a crop can be relied upon, the variety is deserving of cultivation.

"Bagley's Perpetual originated in New Haven, where it has been cultivated four or five years. It is perfectly hardy, and needs no protection during winter. The canes are about four feet high, and form a beautiful branching bush that supports itself, and is entirely free from spines. The old canes bear a bountiful crop of delicious fruit during the month of July, when the new canes commence bearing, and continue to bear till frost; the same canes bear another crop the following year. The flavor of the berries is as racy as that of the wild raspberry."

It is undoubtedly a variety of the native wild raspberry, which grows in the woods of Connecticut and Western Massachusetts, and though its first crop would be of little value when compared with the fine varieties which are now cultivated, the later berries, if there is enough of them, may render it an acquisition.

● THE CATHERINE GRAPE.—This is the name given to a new seedling, raised by Gen. N. M. Waterman, of Hartford, Conn., specimens of which were exhibited before the Hartford Horticultural Society, and pronounced good. It is thus noticed and described in the *Homestead*:—

"It was originated by Gen. N. M. Waterman, and named after his daughter. The vine is four years old from the seed; three years since it was transplanted—set in its present position,—last year it bore two small clusters, this year fully two bushels. It has a very warm exposure, though the roots are beneath the flagging of the door yard. The clusters are small, compact and firm—the berries not liable to fall off even when over-ripe. The berries are of medium size, less than the Catawba or Isabella, slightly oval, of a light translucent green color, occasionally brownish, (it would be called white;) the skin is not very thin; the pulp soft, sweet and well flavored; the odor has a slight foxiness, and the same may be occasionally observed in the taste."

FINE PEARS AT THE ANNUAL EXHIBITION OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.—The show of fruits, though less in the number of kinds than heretofore, owing to want of space, was fully equal, if not superior, in the quality of the specimens to any previous year. We add the names of the varieties in the three principal stands, as indicative of the sorts which are held in the highest estimation, and which may serve as some guide to cultivators who are about planting trees:—

From M. P. Wilder, ten varieties, viz.:—Beurré Superfin, Merriam, Sheldon, Urbaniste, Lawrence, Swan's Orange, Beurré Sterckman, Beurré d'Anjou, Louise Bonne of Jersey, and Doyenné Boussock.

From Hovey & Co., Sheldon, Seckel, Lawrence, Dix, Duchess, Flemish Beauty, Beurré Sterckman, Beurré Langelier, Swan's Orange, and Doyenné Boussock.

From J. Gordon, Beurré Bosc, Paradise of Autumn, Beurré Diel, Flemish Beauty, Bartlett, Duchess, Belle Lucrative, Louise Bonne of Jersey, Beurré d'Anjou, and Andrews.

POMOLOGICAL SOCIETY OF LYONS, FRANCE.—The meeting of this Society, whose proceedings for 1857 we lately copied, was to be held this year at Paris, on the 25th of September. We shall look with interest to the report of this meeting.

NEW BRITISH FRUITS—In our last number we copied the report of a late meeting of the British Pomological Society, giving an account of several new fruits. At a meeting held Aug. 19th, more new fruits were exhibited, among them several new seedling grapes, which are now attracting much attention. We copy the report:—

GRAPES.—Mr. Melville, gardener at Dalmeny Park, near Edinburgh, sent a seedling Muscat, accompanied by the following particulars:—"It was raised from Cannon Hall Muscat, impregnated by the White Nice, the object being to raise a variety which would set more freely, and possess a hardier constitution." The vine was said to be a very free setter, great bearer, and of very strong habit. These assertions appeared to be fully borne out by a fore-shortened lateral enclosed with the bunch, and containing on itself, and its sub-laterals, three strong bunches, two of which were enough

advanced to show the free-setting properties of the variety at this season of the year. The young wood and leaves were very strong, hairy, and deeply veined with purple, something like the Barbarossa. The leaves were deeply cleft, coarsely and very acutely serrated. The bunch, said to be the first cut from the plant, was small, and not quite ripe, but appeared to have set freely; berry about the size and shape of Muscat of Alexandria; skin thick; flesh melting, as that of Sweet-water, sweet, and decidedly Muscat, but not richly so in the state of ripeness in which it was exhibited. It was impossible for the Society to speak decisively regarding it, and a desire was expressed that it should be laid before them again when more fully developed. Messrs. J. and C. Lee sent bunches of the following four varieties, which formed part of a considerable collection they had picked up in France; they had not before seen the fruit, but had purchased from descriptions such only as bore the character of first class table fruit. Those sent were the first that had fruited, and they expressed their intention of fruiting and exhibiting them all before sending them out, as the only way to make sure of their quality. They believe them to be seedlings raised in France and Italy within the last few years. To account for the loss of bloom on the bunches sent, they mentioned that the plants had been grown in a house along with young vines, and constantly syringed. Chasselas Rose de Falloux: A grape of the Chasselas section, but not nearly so high flavored as C. Musqué; the fruit exhibited, however, displayed no tendency to split, although grown in a constantly syringed house. The bunch was long, compact, and appeared to have set well; color pale yellow, approaching to amber; form of berry oblate, irregular, those terminating each branch of bunch being the largest; skin tough; flesh firm, juicy, moderately sweet and musky, separating easily from the seeds, which are few but large. It was not considered likely, from this examination, to be a valuable addition to varieties in cultivation. Ulliade: A grape apparently of the Hamburgh section. Bunch of moderate size, and compact; color black; berry slightly oval; skin thin; flesh tender, very juicy; flavor very sweet, more so than Black Hamburgh, but less vinous and luscious. Alto-

gether it was considered a variety which the Society would be glad to see again. *Calliaba*: A grape of the St. Peter's section. Bunch long, black; berry rather small, round; skin about equal in thickness to Black St. Peter's; flesh tender, juicy; flavor very sweet, but slightly astringent. If it hangs well it may be a useful variety of this section. Another kind, sent without a name, was believed to be Dutch Hamburg.

APRICOTS.—Mr. Edmonds, of Chiswick, brought a water color drawing and read a very interesting account of a remarkable tree of that well-known hardy variety, the Breda, growing in the grounds of Joseph Coleman, Esq., Bohemia House, Turnham Green. The trunk measures four feet eight inches in circumference, and the tree covers an extent of ground 39 feet diameter in one direction, and 46 in the other. It is literally loaded and breaking down with its fruit. The number produced has been estimated at 50,000; it had been considered the most remarkable horticultural wonder of the year by all who have seen it. The tree is reported to have borne a similar appearance about twenty years ago, and to have produced a very heavy crop ten years since. Mr. Edmonds introduced the matter with the special object of directing attention, especially amongst amateurs, to the great importance of thinning fruit, when a tree attempts to produce an extraordinary quantity in proportion to its size and strength, that it may properly mature a fair crop, and may not be so weakened as to be incapable of producing any another year. Mr. Epps, of Maidstone, sent fruit of a seedling said to be raised from the Moor Park in 1847, and grown on a fine healthy standard in an orchard; quite free from canker, very early, being ripe sooner on the standard than its parent is upon a south wall. It is also said to be hardy, and an abundant bearer, this being the third day of its fruiting, and its produce about thirteen dozen, after thinning off a gallon when the fruit was small. The tree is said to be of a number raised at the same time, but the others are subject to canker, as also is the parent against a wall in the same soil. The fruit was about the size of the Roman, much compressed; color rich orange; flesh also rich orange, soft; flavor very little; stone pervious. It was not considered that the variety

would be of value for dessert, but might be useful for preserving purposes, on account of its fine color and large size.

PLUMS.—Several large collections of plums were exhibited, the most remarkable of which were the following: From Mr. Wighton, of Cossey Hall, a dish of remarkably fine Green Gage, from a very old standard, known to be only of the second generation from the original tree; though exceedingly fine, they were not larger, greener, nor richer flavored than are seen every day from healthy trees of the fiftieth generation. Also, a dish of Violet, a very hardy variety of the Muscle section, common in Norfolk, being propagated by suckers, and a great favorite in that district on account of its always producing good crops. The fruit is purple, oval, about the size of a large Damson; stone adhesive; only slightly acid; probably the same as is known in some districts as the Violet Damson. Mr. W. Ingle, gardener to C. G. Round, Esq., Birch Hall, Colchester, sent a seedling, as the earliest yellow plum he knew, from a standard growing in an indifferent position. The fruit was below the medium size, oblong; color greenish yellow; stone adhesive; very like a variety called the Harvest plum, which is grown in the Kent market gardens. The flavor and general appearance were not considered sufficiently good to make it worthy of cultivation. Francis Davies, Esq., M. D., of Pershore, sent specimens of the Brandy Gage, which were in a better condition for judging of its merits than last year. The fruit was below the medium size, slightly obovate, very ripe, and somewhat shrivelled; color greenish yellow, tinged with russet; stone adhesive; flavor sugary, and richly vinous. It was considered that if grown on a wall, and allowed to hang, it would dry into a delicious sweetmeat. Jemmy Moore, a local variety, reported to be a great bearer, appeared likely to be good for culinary purposes. In appearance it closely resembles Denyer's Victoria, or Alderton, from which, however, it differs in its flesh adhering to the stone, instead of separating as in the other variety. Jemmy Combe, also a local variety. This, if distinct from Magnum Bonum, is only so in being somewhat larger than the latter is usually seen. Mr. F. Dancer, of Little Sutton, sent a collection containing, among other kinds,

Chapman's Prince of Wales, which is the best variety of the Orleans section, being equally hardy, larger, and productive; flesh more melting, and flavor sweeter. This variety of Orleans is really useful as a dessert fruit. Mitchelson: a medium sized purple variety of the Muscle section, said to be hardy, a great bearer, and much valued in the market for preserving purposes; the fruit is oval, stone adhesive, and flavor much resembling the Wine Sour. It was considered worthy of being more extensively cultivated.

APPLES.—Mr. A. Godwin, of Ashbourne, sent specimens of two varieties, that are esteemed in Derbyshire first class new kitchen varieties. Lord Suffield, which was also sent by Mr. Turner, of Slough, to the last meeting, is considered an improvement on Keswick, which it much resembles in its conical form, close eye, and pale green color. It is equal in earliness and productiveness; less acid; its superior solidity also renders it less subject to be bruised when gathered and harvested, and makes it keep longer in good condition. The flesh boils into a pale brown, subacid pulp. Closeburn's Seedling, a variety in form and appearance much resembling the New Hawthornden; and that it may be compared with this at the next meeting, Mr. Godwin has been requested to send it again. The skin is thin, core small, and flesh firm; the latter boils into a perfectly white, slightly subacid pulp. Mr. F. Dancer sent some fine Cellini Pippin. This excellent culinary variety is reported to be losing favor in many districts on account of the tree cankering. It would be very desirable to ascertain exactly in what localities, soils and exposures this tendency has evinced itself; and the Council will thank every member who possesses this kind to communicate, before next meeting, his experience regarding it, stating full particulars concerning the circumstances under which it is grown.

THE THORP PEAR, described by Mr. C. Downing, in the Revised Edition of the *Fruits and Fruit Trees of America*, as a new variety received from Mr. Ketchum of Brandon, Vt., is the well known St. Michael or White Doyenné. We have now before us fine specimens, sent by F. J. Meech of Shelburn, Vt., raised from trees grafted from Mr. Thorp's original tree, which are identical with that old pear. Mr. Downing says the flavor is "very agreeable." We find it quite delicious.

NEW ENGLAND SHRUBS.

BY WILSON FLAGG.

THE VIBURNUM AND THE ELDER.

THE viburnums and the common elder are very abundant in the borders of woods and fields, and by rustic roadsides in New England. The flowers of each, borne in terminal cymes or corymbs, are very similar both in looks and fragrance. Of the different species of viburnum, the most beautiful and common in this vicinity is the Sweet Viburnum, (*V. lentago*,) or Sheep berry. It is a tall and wide spreading shrub, with dense foliage and branches, forming a compact hemispherical head. The flowers are hardly to be distinguished from those of the elder, having a similar fragrance in a less degree, and the same downy appearance and yellowish hue upon the surface of their clusters. The leaves of this plant are single, ovate, opposite and finely serrated.

Many of our shrubs produce more showy and brightly colored flowers, but there are not many that exceed this in the beauty of its fruit. The berries that hang profusely from its branches, like clusters of grapes, are of a glossy black, like jets, when they are ripe, and have a lustre that is never seen in the grape. Just before they ripen they are of a bright crimson, and when they are blended, as they often are, with the ripe ones, the branches seem to be hung with two different kinds of fruit. This species is highly valued in British gardens, and its berries are said to be a favorite food with the birds.

The next conspicuous species is the *V. opulus*—the same that is cultivated in gardens as the Snowball tree and guelder rose—the flowers having become barren by the peculiar culture adopted by florists to bring them out in a spherical head. In the wild species some barren florets will always be found mingled with others in the cluster principally encircling the disc. In New England this plant is called the Tree-craneberry, from a superficial resemblance of its fruit to the craneberry, but these two plants have no botanical relationship, and the resemblance in their fruit is only in their roundness

and redness; their flavors and their structure are entirely different.

The guelder rose of our gardens was originally brought from Asia, where it is still found in wooded swamps, and where its principal beauty consists in its bright red berries. In its cultivated state all its florets are barren and produce no fruit. There is a variety of this species that bears rose-colored flowers resembling the *Hydrangea*.

The most celebrated of the *viburnums* is the *V. lantana*, or the Wayfaring tree, a name probably given to it from its habit of growing by roadsides, and forming an agreeable shade for the traveller with its low dense and spreading branches. This tree rises to the height of twenty feet or more, and has an ample head of foliage. It has become well known from its poetical associations, having been celebrated in the following verses by William Howitt:—

Wayfaring tree! what ancient claim
Hast thou to that right pleasant name?
Was it that some faint pilgrim came
Unhopedly to thee,
In the brown desert's weary way,
Mid toil and thirst's consuming sway,
And there, as 'neath thy shade he lay,
Blest the Wayfaring tree?

Or is it that thou lovest to show
Thy coronals of fragrant snow,
Like life's spontaneous joys that flow,
In paths by thousands beat?
Whate'er it be, I love it well;
A name, methinks, that surely fell
From poet, in some evening dell,
Wandering with fancies sweet.

A name given in those olden days,
When mid the wild-wood's vernal sprays,
The merle and mavis poured their lays
In the lone listener's ear,
Like songs of an enchanted land,
Sung sweetly to some fairy band,
Listening with doff'd helms in each hand,
In some green hollow near.

This shrub is noted in England for its varying aspect, from the time it puts out its leaves in spring until the fall of the leaf in November :—

“Spring weaves for its limbs a subtle drapery of vivid green ; summer deepens its hues, and autumn dyes the woof with russet, gold and crimson, until the tattered garb falls piece-meal to the ground, and the cold keen skies of winter glitter above a mighty maze of leafless limbs and branches bare. But in all seasons we must claim for it the attributes of majesty and beauty, suffering no change with changing vesture, and knowing no abatement with the diminution of its commingling leaves.”

The American Wayfaring tree is apparently a degenerate offspring of this noble stock ; it is a low, stubbed and crooked bush, and it is also degraded from the poetic dignity of its congener by receiving the vulgar names of Hobble-bush and Tangle-legs. It is not more than half the height of the European tree, and is found chiefly in low swampy woods. Indeed the *V. lentago* seems to have more of the general characteristics of the Wayfaring tree, though not answering to its botanical character.

Among a few other species may be named the Arrow-wood, (*V. dentatum*) so called because the young shoots of the tree were used by the aborigines for arrows ; and the Naked Viburnum (*V. nudum*) or withe-rod, the slender branches of the last year's growth being used as cords to bind sheaves. The fruit of this species is large and edible.

The Maple-leaved Viburnum, or Dockmackie, (*V. acerifolium*) is a very neat and slender shrub, growing in dry woods. The oldest Dutch settlers in Columbia county, N. Y., according to Eaton, inform us that the Indians in that vicinity considered the application of the leaves of the dockmackie, as a sovereign remedy for every kind of inflammatory humor, and that they have always used them for this purpose with success.

THE ELDER.

All persons, whether botanical or unbotanical, are familiar with the common elder (*Sambucus canadensis*) a plant which is seen almost everywhere in fallow lands. There is no plant

indeed that is more generally known. We have seen its dried flowers in nice paper bags, neatly done up by the hands of the simpler ; and we have breathed its odors as they are wafted from the vessel in which its flowers are steeping over the fire, before we ever saw them in the fields. We have heard the cries of poor infants who have been dosed and killed with the decoction, in alternation with catnep, by old nurses who despise physicians. We have heard its medical virtues extolled as beyond all the drugs of the apothecary, and equalled only by Vervain gathered with the left hand, at the rising of the dogstar, during the absence both of the sun and the moon.

We are also familiar with it in more agreeable situations. The elder is one of the shrubs that first attracts our sight in early summer. The bee is seen to hunt for it after its favorite willow blooms have faded ; and its flowers are gathered for perfumery as well as for medicine. In the autumn we have seen the walls and fences laden with its fruit, while its full clusters were stripped, day after day, by the robin and the cat-bird, until not one was left to fall to the ground. After its leaves have fallen its branches are sought by children who use its hollow wood for the manufacture of a variety of juvenile implements.

The elder is a peculiar shrub and is not strictly perennial ; at least it is very short-lived, and the most healthy and productive branches are those which are only one year old from the root, resembling in this respect the genus *Rubus*. The leaves of the elder are pinnate, and usually retain their verdure until they fall. The flowers are very fragrant, and their odor is unlike that of any other flower ; they are used in Europe to give wine the flavor of Frontignac. But the inner bark is offensive, and possessed of powerful medicinal properties. The berries of the European elder are said to be poisonous to poultry, but this property has never been observed in those of the American species. All the species require a moist rich soil, and grow up rapidly from the root, bearing fruit on the growth of the previous year. The Latin of this plant, *sambucus*, is said to be derived from the Greek name of a musical instrument made from its stem. The only pal-

pable difference between this species and the European elder (*S. nigra*) is in their size and longevity, the latter being a tree and more strictly perennial than the other.

The other New England species, called the Panicked elder, (*S. pubescens*), is supposed to be identical with the *S. racemosa* of Europe, each bearing loose panicles of dark scarlet berries, which are very ornamental. There is a variety with white fruit. The panicked elder is found in the interior of the state, but seldom near the sea-coast. I once found a single specimen in the woods opposite Mingo's beach in Beverly; but this is the only one I have ever been able to discover anywhere near the coast. It is distinguished from the common elder by its mode of bearing its flowers in a loose panicle instead of a cyme. It is also distinguished as the red-berried elder, the other as the black-berried elder.

THE CARNATION.

BY M. A.

THE present perfection of this delightful "florist" flower is the result of long and patient industry. At the beginning of the eighteenth century it numbered between five and six hundred varieties. Throughout the civilized world it is an especial favorite; its simple and graceful beauty, and above all its delicious fragrance, has an irresistible charm over all hearts. In its normal state it can be found amongst the Swiss Alps, and occasionally in the southern parts of England, upon the broad ridges of castle walls and ancient buildings.

The parent of the present carnation of the florist is botanically designated *Dianthus caryophyllus flora pleno*, and from this has sprung sufficient to supply the most capacious taste. It has a sportive power of self-variegation, and activity to keep even a morbid love of novelty in constant play; but such are the requirements of its present standard, that scarcely one in a thousand possess sufficient interest to command more than momentary attention. As excellence in variety has increased, fastidiousness has kept step to reject from the very name of carnation all such flowers as have the pervading red color of the

clove pink, and all others, be they what they may, which have not a ground color of pure, unspotted, untinged white. All carnations understood within these restrictions are classified into bizarres, flakes, and picotees, and are again distributed into two other subdivisions. Bizarres are striped with two colors on the white ground, and have their colors in irregular variegations; flakes are striped with one color on the white ground, and have their stripes large and extending across the petal; and the picotees are pounced and spotted in a very diversified manner on their white ground, and are more hardy and generally smaller than the other classes. The bizarres generally show a greater proportion of one of the striping colors, yet those are held in the highest estimation which exhibit the two colors in equal proportion, with the stripes running parallel to each other and distributed equally over the flower. The same may be said of flakes, which too often exhibit too much or too little of the striping color. Those are the best which exhibit, in well balanced proportions, the striping and ground color. Formerly the distinguishing character of the picotee was the notched or fringed-edged, but such now will not "pass muster" where JUDGES and growers are even *indifferently* "posted up." They must possess the smooth edge, or what is technically termed *rose leaf*, and their colors bright, clean, and well defined. Scarlet bizarres are striped on their white ground with scarlet and maroon, and the varieties of these are such as differ in the intensity of their colors. Crimson bizarres are striped upon their white ground with either pink and purple or rose and purple. Flakes are distributed into three subdivisions, viz., scarlet stripes, rose and pink stripes, and various hues of purple, but in each subdivision there is great diversity in the shading of its characteristic color.

Picotees, which are very numerous and diversified in variety, are distributed into four subdivisions, with respectively scarlet, crimson, rose and purple colors, and are severally distributed into two groups, the one heavy-edged, or the color thickly laid on round the margin of the petals, and the other feathered or light-edged, with the color touching the petals in an unbroken and very delicate line.

Much diversity exists as to the best method of cultivating

prime carnations; it is a topic that has been very copiously discussed, but can be very easily and satisfactorily disposed of in a few words. In Europe they are universally, i. e. "show varieties," cultivated in pots; here it is totally unsuited. Good deep garden soil, (yellow loam is preferable,) enriched with thoroughly rotten cow manure, some leaf soil, and, if too adhesive, some sand is requisite; dig deep and thoroughly, and, when the weather is fairly settled, set out the plants nine inches by twelve apart; stir the surface frequently, and as soon as they begin to "spindle," or throw up their flower stems, remove all but one, which tie to a neat strong stake, and then determine upon the number of buds to leave, varying according to the strength or character of the plant, which will be not less than two nor more than five. When the buds become fully swollen, and before they burst, a ligature should be tied around each pod, half way down; when the bursting commences, take hold of each division of the calyx and turn it down to the ligature. The weather, about the time of flowering, is usually bright and hot, thus prematurely hastening the development of the flowers. An evening visit with the water pot, sprinkling in and around the plants but not over the flowers, is beneficial. Shade, too, in the hottest part of the day is necessary. For the real amateur, cotton cloth, attached to a roller and fixed on a neat skeleton frame work so as to let up and down at pleasure, is the thing. Second-hand fishing nets, termed seines, stretched double over stakes sufficiently high to walk under, is a very good contrivance, and need not be moved until the bloom is over.

As soon as the "grass" is ready for layering, it should be done, thus obtaining strong plants by the middle or end of September, when they should be transferred to their winter quarters: for this purpose, make a bed the size of your cold frame and plant thickly; by the end of November strew two or three inches of dry tan amongst them; put on the frame, add a few dry fresh leaves, place the sashes over them, but give all possible air; exclude nothing but heavy rains, snow, and extreme frost. When bright, lovely, smiling May comes round again, transfer them to more agreeable and attractive quarters, and there induce them to become, as it truly is, "Jove's own flower."

General Notices.

ORCHARD HOUSES.—Another season has nearly passed, leaving me more than ever convinced that where walls are not already built they may be entirely dispensed with for the culture of peaches, nectarines, and apricots. They are for the most part expensive deformities, and like stage wagons and stage coaches, will in a few years be placed with the things of the past.

It would be a great gain for the poor under gardeners and apprentices if every fruit-tree wall in the kingdom were demolished except those appropriated to pears, which require but little winter pruning. Poor fellows! to see them nailing and pruning in February and March, some with the incipient consumptive cough, others rheumatically hobbling away from the foot of the ladder they have been standing on, nail, nail, nail, tap, tap, tap, till their fingers, their ears, and their brains are all benumbed and senseless. Oh! if our nobles and gentry could have placed before them a list of the crippled limbs—of the ruined healths—of the valuable lives lost in the cultivation of fruits against open walls, how active would be the sympathies of the kind and the gentle—how soon would all our brick walls be protected with glass.

I have been led into the above reflections by comparing my orchard house with my neighbor's southwest wall. He has plenty of fruit, and his trees are in fine health: his wall cost about 80*l*. My span-roofed 14 feet wide orchard house cost 45*l*. He commenced to gather peaches on the 25th of August. I commenced to gather them on the 25th of July. His peaches are not large and are not fine in flavor, being less juicy and piquant than mine, which have this season been large and remarkably good. My neighbor's apricots have been abundant and large, but they have apparently ripened too rapidly owing to the hot weather, for they have not been high flavored and juicy; mine from my orchard-house trees which gave a full crop have been most luscious and juicy, unlike those from walls, which are apt to be ripe on one side and not on the other. Mine remained on the trees till thoroughly ripe, and then were like bags of syrup, the juice flowing from them in a stream on the least pressure.

Apricots may be planted out in an orchard house either as bushes or half standards with good results, for they are not inclined to grow so wildly as peaches and nectarines which, unless annually removed, *will* baffle the cultivator with their over-luxuriant shoots; apricots on the contrary become in a few years, if root-pruned occasionally, or what is better practice removed and replanted biennially, sturdy and most prolific trees. In a short time the apricot house will be indispensable in all large gardens, to the great comfort of gardeners, who it is well known have much trouble with this, as at present cultivated, precarious crop; for in spite of straw mats, copings, canvas, and other protectors, how often is the crop lost, either by

being over-protected so that the blossoms all drop off for want of air, or from the frost penetrating through the protecting material. Under glass in the cold, dry atmosphere of the orchard house the crop but rarely fails, and the careful gardener may enjoy his night's rest even during a sharp April frost, when all his trees are in full bloom. Apricot trees, as is too well known, are liable to suffer from a sort of plethora, from which large branches die off suddenly in summer, leaving very ugly gaps; under glass this but rarely takes place.

Your readers ought I think to hear all about an orchard-house failure, for I dare say it is not a solitary instance under the same circumstances. My friend living within 10 miles of London built last winter a very nice house, span-roofed, 14 feet wide and 100 feet long. His trees even the first season blossomed well and promised a fair crop of fruit. He is called from home daily to his London office, and being well up in orchard-house culture he left orders with his gardener to syringe the trees morning and evening. Towards the end of June he wrote me that in spite of abundance of air given to the house all day, his trees were much scorched. As my house was of the same length and width, and constructed in the same manner, and my trees were all in the most vigorous health, I felt interested and had the trees looked at. They were found to be smothered with red spider, and then it came out that the gardener, to use his own words, "thought that they did not require so much syringing, and that he had not time to do it." The growth of the trees is ruined for this season, and to a certain extent for the next; the peaches are of the size of walnuts, and about as hard.

Another orchard-house case, and I have done. A gentleman living in Surrey, a short distance from London, gave his gardener the orchard-house book and told him to read it, for he wished to have an orchard house. Shortly after the following dialogue took place:—

Gent. "Well, have you read the book?"

Gard. "Yes, and I can tell you it won't do."

Gent. "Why? It seems plain enough."

Gard. "It's all nonsense, it can't be done."

Gent. "Oh, very well; I only tell you it *shall* be done, and well too."

This gentleman has now an orchard house managed by his disputatious gardener, and managed very well.

The London suburban self called gardeners are as a class conceited and unmanageable. London men of business employing one gardener and delighting in their gardens have more vexation from their gardeners than can be told of. How much it is to be lamented that some institution does not exist for the purpose of educating gardeners for the upper ranks of the middle class, so that what are called "single-handed places" could be filled by competent men.

Sept. 1. I have again visited my neighbor's wall. His peaches and nectarines are not so large as mine, neither have they that abundance of juice and delicate aroma that mine have. It was the same last year, so I rest.—(*Gard. Chron.*, 1858, p. 669.)

HOW TO STORE WINTER PEARS IN SMALL QUANTITIES.—Get some *unglazed* jars; garden pots covered by the pan will do. Make them perfectly clean, if they have ever been used. The best way is to half burn them over again.

Gather your pears very carefully, so as not to rub off the bloom or break the stems. On no account knock them about so as to bruise them. Put them on a dry sweet shelf to sweat. When the sweating process is over rub them dry with a soft cloth, as tenderly as if you was dry rubbing a baby.

As soon as they are quite dry put them one over the other into the jars or garden pots, without any sort of packing; close up the mouth of the jar *loosely*, or if the garden pot, by whelming the pan over it, and store them away in a dark closet, where they can't get the frost.

Open the jars now and then to see how they are getting on.

Don't put more than one sort in a jar if you can help it. Mind, the warmer they are kept the faster they will ripen.—(*Mr. Glasser's Gardening Book.*)

TROPEOLUM LOBBI.—Many of the new *Tropeolums* will be useful and ornamental as winter flowering plants, and where great quantities of cut flowers are required in winter they will by-and-by be considered indispensable. From three plants of Lobbi 4 feet high and 2 feet in diameter we cut hundreds of flowers every week—a great handful every day from December till the end of March. Being of a brilliant scarlet the flowers mix up and contrast beautifully with those of *Deutzia gracilis*, white *Azalea*, &c., in small bouquets. At the end of March we allow many of the flowers to run to seed, and since it has been gathered the plants have recommenced to grow most vigorously, and probably will be in a short time one mass of bloom, dazzling to the eye. Florists who supply the market with cut flowers will find that scarlet *Tropeolums* will amply remunerate them for the little attention they require. Plants do best from seed, but they will answer from cuttings. June and July are the best months to sow the seed, or purchase plants for flowering in late autumn and winter. They like a rich soil, and require one or two shifts before they are put into 13-inch pots, and of course a little artificial warmth in winter is necessary to keep the plant in continual flower. As the blossoms of *Triomphe de Gand* and others are larger and quite as bright a scarlet, they may be perhaps by some considered better than Lobbi. We are trying several varieties as out-door plants, and shall cross them with the old Canary Creeper, and *vice versa*.—(*Gard. Chron.*, 1858, p. 621.)

BOWOOD MUSCAT GRAPE.—On visiting Shrubland last week I was struck with the prolific character of this grape, which is cultivated there in pots amongst Black Hamburgs and Sweetwater, and in every case had set better and produced more bunches than either of those kinds, and under very adverse circumstances, having the worst position in the house—near the door. I learned from Mr. Foggo that little or no artificial heat

had been given; in fact, only one pipe run round the house, and it was equally forward with the other sorts. I have not the slightest doubt that it is as hardy as the Sweetwater. The whole of the plants I saw had from six to nine good sized bunches of well formed berries, which differ very little in appearance from the Muscat of Alexandria, but possibly the habit is not quite so strong. Of course they were not ripe, but having tasted this sort frequently I can pronounce it to be of very superior excellence. I can strongly recommend its introduction where a hardy prolific Muscat-flavored grape is required.—(*Gard. Chron.*, 1858, p. 621.)

GARDENERS.—I wish to know whether a man who engages himself as a gardener ought to be a mere landscape gardener. I have now a person who receives high wages, and who has some taste in ribbons, and border edging, and fancy matters; but he cannot force flowers nor grow winter cucumbers. He does not know one plant from another, and the produce of his kitchen garden is quite discreditable. His camellias and in-door shrubs are wretched, and his newly-planted vines are mildewed. When I remonstrated with him this morning, I was informed that his men had been ordered to attend to such things, and that he had been engaged in considering in what way my place could be more decorated. Do you think this gentleman is a gardener?—(*Ibid.* p. 670.)

Gossip of the Month.

AMERICAN POMOLOGICAL SOCIETY.—The *Country Gentleman* has a very sensible article in regard to the reports that have been published of the last meeting of this Society, and truly says, "Above all things save us from false or *garbled reports*; better no reports at all, than to make a man, by omission, contradict the strongest faith that is in him." This is perfectly correct. One report that we have read contains a jumbled mass of nonsense—scarcely one speaker is reported correctly, and some are made to appear perfectly ridiculous, saying one thing at one moment, and contradicting it again at another. We trust, at the next session of the Society, a vote will be passed prohibiting any extended report until after that made by the Society itself has been published. It would not only serve the interests of pomology to do so, but prevent the Society from being a laughing stock for the whole country.

THE CHRISTIANA MELON.—This fine melon succeeds well in all parts of the country. Dr. S. Kneeland, Jr. of this city, in a letter to Dr. E. Wight, Corresponding Secretary of the Massachusetts Horticultural Society, states that he lately received a letter from Winona, Minnesota, which might prove interesting to the members, stating that "the Christiana melon, the seeds of which were given to the writer by Mr. D. T. Curtis of your city, two years ago, has been pronounced here to be the very best; and I think I never tasted anything in the melon line so delicious. The seeds

are in great demand, and a great many of this kind will be raised here next season. This part of the country is very prolific in everything of the water-melon and pumpkin kind."

PLANTING EVERGREENS IN THE AUTUMN.—Mr. John A. Hall of Raynham, Mass. informs us that he finds evergreens set out in the fall do equally as well as those set out in the spring, if set with a ball of earth, and trees of small size. "I planted, for Zebulon Pratt of Middleborough, nineteen acres of pine trees, ten feet apart each way, two years ago, in the months of September and October. The winter was severe, but only three hundred died. There were four hundred and thirty set to the acre. I have since set a number of acres, and have several acres to set.—*Yours truly,* JOHN A. HALL."

PEARS.—"Happening in" at Col. Denny's, a few evenings since, we met several of our amateur pomologists revelling in some of Hovey & Co's one hundred varieties of pears, which were on exhibition at the State Fair. Those which had already ripened and were just right to be eaten, are the following:—Dix, Sieulle, McLaughlin, Urbaniste, Howell, Baronne de Mello, Des Chasseurs, Sheldon, Dumortier, Belle Julie, Gen. Lamoriciere, and others. Almost all were of marked excellence, but our old favorite the Urbaniste so exceeded all, that it is hardly worth while to draw comparisons between them. Several of these we tasted for the first time, and some, having ripened not under the most favorable circumstances, hardly did themselves justice.—*Homestead.*

SEEDLING VERBENA.—Enclosed I send you a seedling verberna, which, from the peculiarity of having two distinct colors on each petal, is quite novel. There is nothing grown near Philadelphia anything like it; but before doing anything with it, I would be glad of your opinion of its novelty, and of its merits generally, through the Magazine of Horticulture. The truss is not so large now after blooming two months. It is never, however, of the largest size—it is in this respect to one of your neighborhood called "Yenadesse."—*Yours,* T. MEEHAN.

We neglected to notice this seedling in our last, but it is not too late to say, from the appearance of the flower after travelling a distance of 300 miles by post, that it is well worth cultivating. We could, of course, only judge of its colors, and these, as Mr. Meehan remarks, are novel and distinct. It is one of those slight changes towards a spotted flower, and, by reproduction, may give a race of new and fancy colors. We deem it a valuable addition to this fine bedding flower.—*Ed.*

PEAR CULTURE: UNION OF EXTREMES.—Extremes occasionally meet, and we have now an instance on record in the pomological world. A famous though somewhat hypercritical horticultural *litterateur* lately whined considerably at the scantiness of pears in market; he could not get pears to eat for love or money—he could not purchase them as easily as Mercer

potatoes, or that while they came gratuitously to various of his literary brethren, his sanctum was ever *pearless*. Occasionally a few *sweated* Easter Beurres from Boston made their appearance, but the flavor was deficient from the sweating process. Something must be done to stir up a commotion in the pear culturists' camp, and so at it this literary Hercules went, with a whole team of oxen to back him. He only fired the guns; they were loaded by a man of larger physical ability. It was in the old Dutch borough of Germantown that the shells were prepared and exploded. The report reached Buffalo, Rochester, Cincinnati, and even Boston.

We find that, by some very strange coincidence, a celebrated pear culturist of the latter city is quoted as authority for the statement that the culture of the Dwarf pear is a failure on an extensive scale. No less a person than yourself, Mr. Hovey. Can it be that two such extremes as this doting litterateur's opinion and yours should coincide on the subject of pear culture, on which you have been so much at odds? Do you recollect an article written by "Querist" on this subject, in that famous horticultural journal presided over by the "ANTI-PEAR CULTURIST OF GERMANTOWN"? If you compare it with recent developments, you will be amused at the zeal with which this lover of choice fruit has pursued this ignis-fatuus—a barrel of pears. Now that our worthy President, M. P. Wilder, has utterly silenced the contemptible whinings of these fancy horticulturists, who sit with slippers on toe by the parlor fire and write *diatribes* on pear culture, they have shown a wonderful anxiety to eat up their words. They now rank themselves among the leading advocates of pear culture, claiming a place even by the side of such well-tried cultivators as Hovey and Wilder.—*

Societies.

GEORGIA POMOLOGICAL.

The annual meeting of this Society was held at Athens, Ga., August 3, when the following officers were elected for the ensuing year:—

President—L. E. Berckmans.

Vice-President—Richard Peters.

Secretary—William N. White.

Treasurer—James Camak.

Committee ad interim—Wm. N. White, Chairman; R. Peters, J. Camak, E. Bancroft, and J. Van Buren.

There was a show of fruit from various cultivators of the State, among whom the principal were—Peters, Hardin & Co., 34 var. of pears, 16 of peaches, 10 of apples and other fruit—in all, 78 kinds. E. Bancroft, 34 var. of peaches. William N. White, 86 var. of pears, 12 of apples, 35 of peaches, and 14 of plums—in all, 151 kinds. Mrs. H. Camak, 26 var. of pears, and 17 of peaches. Dr. M. A. Ward, 37 var. of apples, 31 of pears,

and 12 of plums. In all, 568 lots of fruit were exhibited, comprising 368 varieties—a very good commencement for Georgia.

CONNECTICUT STATE AGRICULTURAL.

The annual fair of this Society was held at Hartford, on the 13th of October.

The display of fruit was exceedingly fine, and afforded gratifying evidence of the progress which has been made by the farmers and horticulturists of the State.

Apples, by the bushel and half bushel, were shown in great profusion; apples in variety, ranging from six to one hundred and thirty different kinds; and fine specimens of meritorious seedling apples from different contributors. Pears by the dozen; by the bushel; and in varieties, reaching the high figures of one hundred in one lot, and one hundred and twelve in another. Grapes (open culture and under glass)—an unsurpassable variety and unmistakable superiority.

S. D. Case of Canton exhibited twenty half bushels of most excellent apples, and fifty-four varieties of six specimens each. Col. Solomon Porter made a noble show of apples in baskets; unfortunately, however, for any one examining them for instruction, very many were misnamed, or bore synonyms not at all in use. P. Steele & Sons showed thirteen varieties in half bushels, of excellent quality. P. D. Stillman showed twelve varieties in half bushels, and thirty varieties in plates. J. M. Gillet of Burlington showed one hundred and three varieties, and others exhibited quantities varying from twenty to fifty sorts.

Pears were shown in large quantities, also. From without the State, Messrs. Thorp, Smith & Hanchett of Syracuse had one hundred and twelve sorts, and Hovey & Co. of Boston one hundred varieties. From the Connecticut cultivators there were smaller collections, but excellent fruit.

Numerous premiums were awarded—Messrs. Thorp, Smith & Hanchett and Hovey & Co. receiving each a silver medal for their collections of pears.

NEW YORK STATE AGRICULTURAL.

The annual fair of this old Society was held at Syracuse on the 8th of October.

Owing to the lateness of the season, the display of flowers and fruit was not so extensive as usual. We have not seen any complete report of the premiums awarded in the horticultural department, and copy the following general account of the exhibition:—

FRUIT.—The display of fruit was exceedingly small; indeed, we never saw so poor an exhibition at any State fair. In the nurserymen's department there were only two collections of fruit, and these were very fine, Thorp, Smith & Hanchett of Syracuse exhibited 135 plates of pears, 82 of apples, 32 of plums, and some plates of quinces, melons and grapes. Ellwanger & Barry of Rochester, 147 plates of pears, 9 of plums, and a dozen of Bea's mammoth quinces. E. C. Frost of Schuyler Co., 3 plates

of apples. This comprised all of the fruit shown in the nurserymen's department, except about a dozen plates of grapes by G. E. Ryckman of Chataque County, and Dianas and Rebeccas by William Brooksbanks of Hudson, and a few melons. In the Amateur department the display was a little better,—the apples more in number and equal in quality, but the pears were not as numerous or fine.

FLOWERS.—The floral department was almost a failure, and the strange spectacle was presented of a floral hall almost without flowers. In the nurserymen's department there was but one collection shown, and that by Thorp, Smith & Hanchett. We had not the heart to look upon it, so lone and desolate. The dahlia, the queen of flowers for exhibition, was wanting, only about a dozen specimens being there. They had a very fine display of verbenas, about one hundred varieties; a large lot of roses (perhaps 150), but they were not in fit condition to show; some very good petunias, and a few asters, &c.—*Rural New Yorker*.

MAINE POMOLOGICAL.

The annual meeting of this Society was held at Augusta on the 5th of October, and the following officers elected:—

President—E. Holmes, Winthrop.

Vice-Presidents—H. Little, Penobscot; S. F. Perley, Cumberland; F. Fuller, Kennebec; S. W. Coburn, Somerset; J. Currier, Lincoln; J. Rogers, York; D. Forbes, Oxford; S. Butman, Walden; C. Chamberlain, Piscataqua; S. F. Dike, Sagadahoc; R. Martin, Androscoggin; O. Gould, Franklin; Wm. D. Dana, Washington; J. Allen, Aroostook.

Recording Secretary—D. A. Fairbanks, Augusta.

Treasurer and Librarian—B. Eaton, Augusta.

Massachusetts Horticultural Society.

Saturday, Oct. 2, 1858—The annual meeting of the Society was held to-day for the choice of officers—the President in the chair.

Owing to a quorum not being present to vote, the election was postponed three weeks, to Oct. 23d.

Exhibited.—**FLOWERS:** The show of dahlias for premium took place to-day, but owing to light frosts in many places, the plants were injured and the display was small. The principal exhibitors were Messrs. Hovey & Co., Barnes & Washburn, E. S. Rand, J. Nugent, A. Apple, C. Copeland, Galvin & Hogan, Evers & Co., and J. Breck & Son.

AWARD OF PREMIUMS FOR DAHLIAS.

CLASS I. PREMIER PRIZE—Not awarded.

VARIOUS COLORS.—For the best yellow, to A. Apple; best maroon, to Barnes & Washburn; best crimson, to C. Copeland; best dark, to

A. Apple; best white, to Barnes & Washburn; best scarlet, to C. Copeland; best striped, to C. Copeland—\$1 each.

BEST 24 DISSIMILAR BLOOMS.—To A. Apple, for *Mad. Zahler*, *Queen of Yellows*, *Joshua Longstreth*, *Miss Vyse*, *Marshal Soult*, *Picotee*, *Sir R. Peel*, *Magnet*, *Leader*, *Gen. Fanchier*, *Reignauld*, *Mrs. Whale*, *Prince de Wagram*, *Admiral Stopford*, *Lady Cathcart*, *Mrs. Mathews*, *Mont Blanc*, *Thwala Girl*, *Mrs. Wentworth*, *Triumph de Roubaix*, *Grant Thorburn*, and three others—\$8.

For the second, to Hovey & Co., for *Triumph de Peck*, *Dr. Rozies*, *Bombe de Sebastopol*, *Othello*, *Lord Palmerston*, *Malakoff*, *Tribly*, *Fanchonette*, *Polichinello*, *Magnet*, *Victoire*, *Optima*, *Tamerlane*, *Auriol*, *Etoile du Nord*, *Prince Napoleon*, *Prééminent*, *Lord Bath*, *Leader*, *Gaudiamus*, *Mad. Zahler*, *Gen. McMahon*, *La Delf*, and *Empress*—\$5.

BEST 18 DISSIMILAR BLOOMS.—To J. Nugent, \$6.

For the second best, to J. Breck & Son, \$4.

BEST 6 DISSIMILAR BLOOMS.—To Hovey & Co., for *Othello*, *Triumph de Peck*, *Gen. McMahon*, *Lord Palmerston*, *Tribly*, and *Bombe de Sebastopol*, \$5.

For the second best, to J. Nugent, \$3.

In a stand for the premier prize, exhibited by Hovey & Co., there were some superb blooms of *Triumph de Peck*, *Othello*, *Dr. Rozies* and others, but owing to the cool weather, one or two of the flowers were not quite fully expanded, and the stand was for this reason set aside.

FRUIT: There was a very fine show of fruit, particularly of grapes.—From F. Dana, *Late Crawford*, and *Dana's Late peaches*, the latter very fine; also *Hubbardston Nonsuch* apples, and one kind without name. From W. C. Burton, fine *Beurré Clairgeau* and *Beurré Bosc* pears. From J. W. Foster, *Gravenstein* and *Porter* apples, fine. From J. Munroe, several varieties of handsome apples, and *Seckel* pears. Messrs. Hovey had a dish of very remarkable *Sheldon* pears, and J. Gooding some equally remarkable *Louise Bonne of Jersey*. From H. Vandine, *Thompson*, *Buffum*, *Flemish Beauty* and other pears. From J. W. Moore, fine *Bartlett* pears and *Late Crawford* peaches.

E. W. Bull had a fine show of *Concord* grapes, very large bunches and berries, fully ripe and very black, with a superb bloom. From E. A. Brackett, two clusters of the *Union Village*, very beautiful, with very large berries, and nearly ripe; they were tried by the Committee and pronounced exceedingly fine. From J. C. Whittier, *Concord* and *Diana* grapes.

Oct. 9.—Exhibited. **FRUIT:** From J. F. Allen, grapes, figs, and very fine *Beurré Bosc* and *Seckel* pears. From G. Gilbert, *Beurré Superfin* and handsome *Lawrence* pears. From J. A. Stetson, large and handsome quinces. From J. Gordon, *Bonne des Zees*, *Beurré Bosc*, and fine *Buffum* pears. From S. W. Fowle, *Lyscom* apples, very fine. From F. Dana, large and very fine *Seckels*; also, *Louise Bonne of Jersey*, and *Late Crawford* and *Dana's Late peaches*. From N. White, *Napoleon* pears and seven varieties of apples. From J. Eustis, *Boxford*, *Porter*, *Gravenstein*, and a variety of apple called the *Poillard*, very handsome. From S. Sweetser,

Beurré Clairgeau and other pears, and Porter and Hubbardston Nonsuch apples. From E. Brown 20 varieties of pears and 26 var. of apples, several of them very handsome specimens. From Hovey & Co., beautiful specimens of Swan's Orange pears.

Of grapes, G. B. Cutter sent fine Concord, Catawba and Isabella, some of the clusters of the latter very large, weighing one pound. E. A. Bracket sent the Delaware, just ripe.

Oct. 16.—*Exhibited. Fruit:* From J. Gooding, a dish of very remarkable Beurré Diel pears, the largest measuring $16\frac{1}{4}$ inches in circumference, and weighing *twenty-two ounces*. From Judge Crosby, Urbaniste pears, very fine. From F. Dana, Merriam, Louise Bonne of Jersey and Walker pears; quinces, and Late Crawford and Dana's Late peaches. From Geo. Everett, several varieties of apples, including fine Hubbardston. From T. Clapp, Dutch Mignonne apples and Urbaniste pears. From J. Eustis, Poillard, Porter, Boxford, and other apples. From H. Vandine, Beurré Bosc, Louise Bonne and other pears. From W. P. Wilder, handsome Beurre Superfin pears. From E. S. Rand, good clusters of the Barbarossa grape, and from C. E. Grant, very fine Catawba and Isabella grapes—some of the berries of the latter were more than an inch in diameter.

Oct. 23.—The adjourned meeting of the Society was held to-day, for the choice of officers for the year 1859. The following gentlemen were elected:—

President—JOSEPH BRECK.

Vice Presidents—C. M. Hovey, Eben Wight, E. S. Rand, J. F. C. Hyde.

Treasurer—Wm. R. Austin.

Corresponding Secretary—Eben Wight.

Recording Secretary—F. Lyman Winship.

Professor of Botany and Vegetable Physiology—John Lewis Russell.

Professor of Zoölogy—J. W. P. Jenks.

Professor of Horticultural Chemistry—E. N. Horsford.

Committee on Fruits—J. S. Cabot, Chairman; W. R. Austin, C. M. Hovey, W. C. Strong, E. A. Story, J. F. C. Hyde, Robert Manning.

Committee on Flowers—E. S. Rand, Jr., Chairman; Geo. W. Pratt, A. C. Bowditch, W. J. Underwood, C. H. B. Breck, Thos. Page, T. G. Whytal.

Committee on Vegetables—D. T. Curtis, Chairman; P. B. Hovey, Francis Marsh, Bowen Harrington, A. Bowditch, Geo. Everett, George F. Stone.

Committee on Library—C. M. Hovey, Chairman; A. Bowditch, E. S. Rand, Jr., Wm. A. Harris, R. McCleary Copeland, Librarian.

Committee on Synonyms of Fruit—M. P. Wilder, Chairman; B. V. French, Samuel Walker, C. M. Hovey, and Chairman of the Committee on Fruits.

Executive Committee—The President, Chairman; the Treasurer; M. P. Wilder, S. Walker, J. S. Cabot.

Committee for establishing Premiums—Chairman of Committee on Fruits, Chairman; Chairmen of Committees on Flowers, Vegetables, and Gardens; F. Lyman Winship.

Finance Committee—Josiah Stickney, Chairman; Samuel Walker, J. S. Cabot.

Committee on Publication—Corresponding Secretary, Chairman; Chairmen of Committees on Flowers, Fruits, Vegetables, and Gardens; Recording Secretary; C. M. Hovey.

Committee on Ornamental Gardening—Samuel Walker, Chairman; W. R. Austin, F. L. Winship, and Chairmen of the Committees on Fruits, Flowers and Vegetables.

The Report of the Committee on the Revision of the By-Laws came up for final action, and, with the acceptance of some amendments, was unanimously adopted as the By-Laws of the Society. 500 copies were ordered to be printed for distribution.

Adjourned two weeks to the 7th of November.

Exhibited.—FLOWERS: A variety of dahlias from Hovey & Co., among which were fine blooms of Triumph de Peck, Gandiamus, Trilby, Othello, Malakoff, Lord Palmerston, &c.

FRUIT: From J. F. Allen, fine Beurré Bosc. From C. Davis, very handsome Beurré Bachelier, and B. Clairgeau. From Hovey & Co., several dozen Swan's Orange, remarkably beautiful, showing the valuable character of this fine pear. From R. W. Ames, extra fine specimens of Urbaniste, Easter Beurré, Le Curé, Duchess, Doyen Dillen, Fondante du Comice, &c. J. M. Ives sent good specimens of Wilkinson and others; J. A. Stetson, Beurré Bosc; James Deering, fine Swan's Orange; Geo. A. Goddard, remarkably handsome Buffum, very high colored. From S. W. Fowle, Blue Pearmain and Hubbardston Nonsuch. From John Gordon, Thompson, Fulton, and Marie Louise pears. From H. Vandine, Marie Louise, Catinka, &c. Very fine clusters of Isabella grapes from G. B. Cutter, one of which was borne on a branch that had been ringed—those not ringed were the finest flavored, though the others were the largest; although ringing hastens maturity, it certainly in this case did not improve the quality.

VEGETABLES: Some immensely large roots of *Dioscorea batatas* were exhibited by Milton Andros; they were two and a half feet long, and weighed two or three pounds each. It is destined to become one of the most valuable acquisitions.

Horticultural Operations

FOR NOVEMBER.

FRUIT DEPARTMENT.

October has been a very fine month—just such a month as the gardener would choose in which to complete his autumn work. Besides, it is just such a month as will prepare all trees and plants to pass through the winter, after such a cool and moist summer. If the weather has been improved, the amateur or professional gardener will have done a greater portion of the labors of the season, and advanced all spring work. The ground is now in fine order for planting, and trees just in condition to move. Con-

tinue to trench, drain and prepare ground not yet completed, and begin to protect all such things as need covering for the winter. A good day now is worth half a dozen cold frosty ones in December.

GRAPE VINES now under way in forcing-houses will require more attention as the season advances. The fruit will now be swelling, and the temperature should be kept up; air in good weather freely, and light early fires in damp cloudy weather. Stop laterals as they advance, and commence thinning early; less water will now be required to keep the house damp. Look after the borders, and have fresh stable manure added and a thick covering of leaves—with boards to shed the heavy cold rains. Vines in greenhouses and graperies may be pruned and put in order for spring work; wash, and destroy all insects. Cold houses should be pruned as soon as the wood is ripe, and the vines laid down and well secured from frost by a covering of leaves.

HARDY GRAPES may now be transplanted, covering them the first year to prevent any injury from frost.

PEACH AND OTHER FRUIT TREES, or vines, in pots, should be put into a warm shed or cellar out of the way of hard frosts, which injure the roots.

STRAWBERRY BEDS should be covered with tan, hay, leaves, seaweed or coarse manure.

STRAWBERRIES IN POTS for forcing should have a sunny situation to ripen the wood, where they can be protected from hard frosts; upon the approach of severe weather they should be removed to a frame, where they can remain till wanted.

GOOSEBERRY AND CURRANT BUSHES may now be pruned.

RASPBERRIES should be laid down and covered with earth.

FRUIT TREES should be transplanted this month.

THE CANKER WORM grub and scale on the pear trees must not be forgotten.

FLOWER DEPARTMENT.

Frosts have held off so long that dahlias are still in perfect bloom in many gardens. The weather has been highly favorable for potting all plants from the open ground, which should now be hastily completed.

CHRYSANTHEMUMS will now begin to bloom, and for a month will be objects of great beauty. Water freely, occasionally with liquid manure.

AZALEAS, now arranged in their winter quarters, will need less supplies of water. Tie out and make fine specimens now.

MONTHLY CARNATIONS, potted early and growing rapidly, may have a shift into larger pots.

PELARGONIUMS will now have grown to good stocky plants, and, as soon as they require it, may have a larger pot.

VERBENAS should have a good situation as near the glass as possible. Early blooming plants should be neatly tied up, and young stock topped off to make bushy plants.

OXALIS may yet be potted for a successional bloom.

CINERARIAS in frames should be removed to the house soon. Fumigate if the green fly appears

CAMELLIAS, now swelling their buds, should be syringed occasionally, and be kept well watered at the root.

LILIAM GIGANTEUM should be placed in the coolest part of the house.

JAPAN LILIES may be potted now for the earliest bloom.

STOCKS should have the protection of a frame till the weather is too severe to risk them out.

ROSES, taken up last month, may be pruned towards the last of this, and brought into the house for blooming.

CUTTINGS of the various bedding plants, put in last month, should now all be potted off.

CHINESE PRIMROSES may have a shift into larger pots.

BULBS, planted last month for early bloom, may be brought into the house the latter part of the month.

HARDY SHRUBS, such as Spiræas, Azaleas, Deutzia, Kalmias, &c., for forcing in spring, should now be taken up and potted.

CYCLAMENS may be repotted now.

NEAPOLITAN VIOLETS, for flowering in the house, should be potted.

CLIMBING PLANTS, Roses, &c., should be pruned of their superfluous wood and neatly trained on the trellis or rafter.

FLOWER GARDEN AND SHRUBBERY.

The lawn yet looks as green and fresh as May. Where there are many trees on or around it, the dry leaves which fall so rapidly should be swept or raked up. Keep the walks raked and rolled. Beds filled with flowers now quite out of bloom, or injured by frost, should be cleared away and the surface levelled. Vacancies in any of the beds of flowers or stands may now be filled.

HERBACEOUS PLANTS.—Continue to divide and reset these during the month.

HYACINTH and other bulbs may be planted.

JAPAN LILIES may be taken up and reset.

SEEDLING HOLLYHOCKS, Canterbury Bells, &c., may now be transplanted into the places where they are to bloom.

HOLLYHOCKS should be protected by a frame, and a covering of dry leaves and boards.

GROUND intended for planting in spring should be trenched and well prepared. Ridge up spare ground for action by the frost.

ROSES of the less hardy kinds, and particularly the Hybrid Perpetuals, bloom much better if the shoots are laid down and covered with coarse manure, or even with soil—they will then come out bright and fresh in the spring. Bourbons and Chinas may be wintered safely by covering with a frame filled with dry leaves.

POLYANTHUSES should be protected by a light covering of leaves.

CLEAR ALL GROUND from weeds, cut away the foliage of all plants when killed by frost, and give a slight covering to the roots with light manure.

THE PREPARATION AND CARE OF COMPOSTS.

No subject connected with successful cultivation is of more importance than the preparation of suitable composts and soils. No matter how great the skill of after treatment, if there is not the basis of a well prepared and appropriate soil every effort will fail to achieve but a moderate amount of success; in truth, it is the key to all good gardening. Yet, strange as it may seem, it is one of the least considerations with a majority of cultivators. Either because the proper materials are not conveniently at hand, or require some little trouble and expense to secure them, or because their preparation is neglected, the compost ground rarely attracts the attention which its importance demands.

Though rather late to offer advice which may be generally available at this season, we have thought we could not do a better service than to awaken the attention of cultivators to a consideration of the subject, that at least a beginning might be made, and at the most appropriate period, usually during early autumn. The compost ground should form a necessary adjunct of every good cultivator's garden. With the increased attention devoted to the special cultivation of the various objects of the flower, fruit and vegetable gardens, and specimens of the greenhouse and conservatory, all who would excel in either or all of these must first see that his soils and composts are judiciously selected, thoroughly prepared, and well harvested, otherwise he may be certain, when a comparison of products is made, he will fail to attain that degree of perfection which the thoughtful and industrious gardener is sure to achieve.

The necessity of appropriate soils need not be enlarged upon. Every plant cultivator, who knows anything, knows that a heath or azalea cannot be grown to any degree of excellence in a stiff loam; and he also knows that a rose will be far from a perfect specimen cultivated in heath soil. So of a hundred other plants we might name. It is a well settled

fact, that though plants will live and sometimes grow in almost any soil, their condition, when contrasted with others grown in a more favorable one, is so marked that they would scarcely be recognized as the same thing. In what way has plant culture attained such a state of perfection in Great Britain within the last twenty years, and how are their superb specimens produced? Not by "pitching in" to the first heap of soil on the potting bench, regardless of its quality,—or into some border of exhausted earth near at hand, as is too often the case,—but by making use of composts prepared with the utmost care, with a barrow of "turfy loam," another of "fibrous peat," a third of "leaf mould," and a sprinkling of "silver" sand, all stored and in readiness for use at all times. It is from such materials that the plants which attract so much attention at the great London exhibitions are produced, and not from the hap-hazard mode we know to be practised by too many cultivators.

And what will achieve wonders in the culture of ornamental plants in pots, will do the same in the flower border, in the fruit garden, and among vegetables. The conditions in which they are placed are different, but the elements of growth are the same. A verbena, a grape vine or a cauliflower in common garden soil, when compared with others which have a properly-prepared compost, are so different, that, while the former simply live and grow, the latter attain the highest perfection of which they are susceptible, and which the art of the gardener can achieve.

Believing that our views are correct, we propose a few brief hints for the preparation of composts, to be enlarged upon at a future time.

First, then, let it be distinctly understood that every cultivator who wishes to attain even moderate success must have his compost ground, of larger or less capacity, according to his wants; the nearer to the place of use the better. If where it might be unsightly, it may be easily prevented from being so by planting an evergreen hedge around it, leaving one or two spaces for entrance thereto. The situation should be slightly elevated, if possible, to keep the compost dry. It is necessary, also, in our climate that there should be some

means of preserving or keeping the composts ; for during our long winters the requirements of a moderate sized garden are such, that a considerable quantity will be needed during that season, and this should be placed where it can be readily obtained free from frost. Where there are greenhouses or graperies with back sheds, the soils may here be stored away in separate bins, properly fitted up for the purpose.

Early autumn, as we have stated, is the best time to secure the most substantial part of all composts, viz., good turfy loam ; but when the season will admit, it may be continued up to cold weather, though that now obtained will not be ready for use till next season. Good turfy loam is a scarce article in many localities, but, as there is no substitute for it, it must be obtained. It consists of the top soil of an old pasture, and should be taken with all the herbage, to the depth of six or eight inches. This should be carried to the compost ground and placed in square or circular stacks, with the turf side down, building it up to the height of six or eight feet, and finishing in a pyramid form, so as to throw off the rain and keep the body of the stack dry. On the approach of cold weather the whole stack should be cut down finely and thrown over, so as to thoroughly mix the whole, breaking up the turf well, and then storing of it where it will be ready for use. Such a soil will form the basis of most of the composts needed for an ordinary garden.

The next important substance is leaf soil, for it enters into the composition of nearly every compost needed for plants ; indeed, without it some kinds of plants would be very difficult to grow ; and for seedlings and young stock it is especially valuable. Whoever, therefore, has a fine collection of plants and would keep it in a healthy condition, should make it one of the very first considerations to secure a good stock of this indispensable soil. We are not sure but what the turfy loam could better be dispensed with than leaf mould, for everything will thrive in the latter, which cannot be said of the loam. It is, when thoroughly decomposed, a good substitute for peat or heath soil, which is a very scarce article. A large quantity of it should always be kept on hand, for, like good wine, it improves by age.

So important in all vegetable growth, no opportunity should be lost in harvesting every leaf which falls from the trees; commence gathering as soon as the leaves begin to fall, and continue the work till all are safely secured. No matter what the kinds are, though oak are the best, they will answer every purpose of the cultivator. If not at hand, the nearest woodland will furnish a supply. At first, they may be used for covering plants, strawberry beds, or any other purpose, where they may remain till spring, when all should be gathered together carefully and made into a large, compact hotbed, which will answer in the place of manure, affording a good and lasting heat, and hastening decomposition more rapidly than in any other way. But if they are not needed for this purpose, let them be thrown into a heap, watering them if very dry. Fermentation will soon commence, and if the whole are thrown over two or three times during the season they will be sufficiently decayed to make use of the finest part the first year, while the remainder may be thrown into a pile to undergo the further process of rotting. With a good heap of such leaf mould and turfy loam, and the addition of a little sand, the cultivator need never be at a loss for a good compost for his plants.

Another very useful, and, with some classes of plants, almost indispensable soil, is peat or heath earth. By this we do not mean *bog soil*, that dug from swamp holes, usually of a black soapy nature. Though, by preparation, it may be made a very good substitute, it is entirely unlike the genuine article. In fact, real heath soil is not very easily to be had. There are but few localities in which it is to be found, so few, indeed, that it is scarcely ever made use of, only among the skilful cultivators of heaths and similar plants. In England it is very abundant; whole tracts of country for miles abound with it; and around Bagshot, near London, where the great American nurseries are situated, it forms the entire soil for some inches deep. We have, however, something of the same soil, or that which answers very well for it, in our old whortleberry pastures, on high land—never in wet places—where it covers the surface for an inch or two in depth only. It is quite dark or nearly black, very fibrous, and usually

mixed with grains of white sand. Where such a peat can be found, a good batch of it should be secured and stacked up in a heap, as recommended for the loam, the turf side downwards, to be frequently turned over till well decomposed and ready for use.

Peat or bog soil, such as we have referred to above, is very common and may be readily obtained, for there is scarcely a section of country where such alluvial deposits are not to be found. When intended for use it should be thrown up in a heap, during the dry weather of summer, and turned often to sweeten it, breaking it well up when in a dryish state. After lying a year, exposed to the air and sun, it proves a very useful addition to many composts which require a quantity of vegetable matter.

The next and last useful material for the purposes of the cultivator, which we have time now to enumerate, is burnt or charred wood, weeds, and the refuse of the garden generally: these, if gathered together in the autumn in a large pile, with a few layers of earth or sods, set on fire and allowed to burn slowly, will form a valuable substance for admixture with the above composts for potting, or for top-dressing the flower borders, fruit garden, or vegetable grounds. It is the best way to dispose of the rubbish which always collects wherever there are grounds of any extent, and at the same time render it invaluable to the cultivator. This, as well as the other composts, should be housed upon the approach of cold weather, where it will be ready for use.

We have not alluded to the preparation of manures, because the importance of these, in addition to most composts, must be familiar to all. It is the too common use of unprepared mixtures of manure and ordinary loam, in the place of such soils as we have described, that causes so many failures among plant cultivators.

If these materials have not been accumulated already, no time should be lost in obtaining as many of them as possible. All good gardening, as we have already said, depends upon a proper selection and thorough preparation of the soil. It is a "platform" which every cultivator should adopt, and upon which all must stand who would not be outrun by his more thoughtful and persevering neighbor.

THE INTRODUCTION OF NEW SEEDS.

BY JOHN LEWIS RUSSELL, PROFESSOR OF BOTANY TO THE MASS. HORT. SOC.

EARLY in the season, a Committee was chosen by the Massachusetts Horticultural Society to report on the Distribution of Seeds by the Patent Office, and the following report, by Prof. Russell, was read at a late meeting. It is so valuable a paper that we embrace this early opportunity to lay it before our readers.—ED.

The introduction of new varieties of valuable agricultural seeds, or of new kinds of fruits, is a subject demanding the most careful consideration of those interested in the profitable cultivation of the earth. The subject addresses the attention of societies formed for the diffusion of knowledge in agriculture. Agriculture, as an employment or as a profession, is wide and extended in its bearings and relations to mankind. Primarily it is the rudest of occupations, but, invested with the aids of enlightened research, it becomes one of the most recondite. At the present, it is in a transition state, having begun to emerge out of the routine of custom, and starting upon that of experiment. By and by we may look for more satisfactory results. We must wait the good time coming. Yet encouraged by decided gains towards its advancement and progress, press upon the public attention its claims to a higher state than it has yet reached.

The earlier condition of man is savage, then nomadic or pastoral, then barbarous or agricultural, then civilized or elegant and constructive. The chase, the wild fruits and seeds, furnish his earliest food; then his flocks, and their milk and flesh and wool, his raiment and sustenance; then the planting of a few trees, the sowing of a few seeds, the enclosing of some acres for protection from beast and bird around his rude dwelling, make him the Agriculturist; and the barbarous state here exists, though it tends rapidly towards the civilized. Lastly, he builds more commodious dwellings, cares more for his cattle and herds, selects his kinds of grains, with attention to their better qualities; prunes, grafts, cultivates his trees; watches every improvement in their fruits, propagates

with assiduity the purest and best sorts, learns how to multiply them to the best advantage, surrounds his private and public edifices with ornamental and beautiful forms of vegetation, and rises to the Horticulturist, and the most ingenious and elegant of occupations pertaining to the cultivation of the earth is his. To this higher end, he calls in to his aid the assistance that science bestows, and natural history and chemistry and kindred subjects now come to his aid and are requisite in his calling.

The origin and rise of agriculture, as such, simply from the barbarous condition of man, naturally tend, without great care, to leave man where his sternest necessities find him, viz., in search of his food and in securing its continuance. To elevate the farmer out of this liability, the establishment of county, state and national agricultural societies is a most felicitous idea and project. There is more need of such an arrangement here than in the pursuit of horticulture, because more intelligence is needed at the starting point to raise a choice fruit, than to raise a bushel of potatoes or an acre of corn. Our Indian tribes were expert in agriculture to the extent that the seeds they possessed enabled them to go: and the maize and pumpkins and gourds and watermelons and beans then cultivated, when the white man found them here, were the products of a soil long tilled for the same crops. In these wondrous people, the visitant to our shores found the rude fisheries or the barter in furs with foreign vessels concomitant with the agricultural pursuits, and hunting and field culture afforded sustenance for winter, or for seasons when food could not be readily obtained elsewhere. It requires no great amount of learning, or reading, or of original experiment, to simply till the fields, or to cut down the forests for the first crops: and "labor is found to overcome all things" mainly in general farming. Some remnants of this tendency to barbarism yet exist—happily fading away—where the rudest implements of labor and the most improvident care of seeds and of crops show that the old well beaten path of husbandry is the one considered the safest and the best.

Since the attention has been directed to the establishment of agricultural societies, we have seen most rapid and aston-

ishing improvement in all sorts of earth labor. But in proportion as labor is saved by labor-doing machinery, the area of such labor diminishes. Once, and not long since, every farmer's pride was to accumulate money to buy every lot and piece of land adjoining his farm; now he contracts his fences and narrows his domains. His farm henceforth assumes the artistic and civilized aspect, and his barns and outbuildings, his orchards and meadows, are in character with his improved tastes. He learns to respect a tree, not so much as formerly for the cords of wood it contains, as for its shade and beauty and pleasant memories. A thousand dollars' worth of barrelled fruits of the orchard is better to him than the expressed juice from the cider press, collected from trees scattered far and wide over his pastures and lots. Drainage and cultivation do more for an acre of fresh meadow or peaty swamp than the product of five acres would naturally yield. And thus, ere he is aware, he grows out of the most hard working and toiling field husbandman into the cultivator, into the horticulturist as it were, his wider domains being only the vegetable and fruit garden on a grander scale. He is none the less practical, though more appreciative of the value of the right kind of practice; none the less laborious, though more elective and refined. In the vicinity to a good market, he even becomes more of the horticulturist still. And his early crops, requiring the hotbed and the sunny aspects of some favorable site, yield him more on an acre or two than a whole farm formerly could afford.

The agricultural farmer still is liable to a disadvantage, which, to a considerable extent, the horticulturist avoids. Societies for the promotion of horticulture avail themselves of the advantages of science, especially of the application of the natural sciences, to their avocations to a greater extent than do those devoted to the interests of agriculture, or wider field labor. Mechanics, with her wonderful contrivances, remove much of the drudgery and severe toil from the farm; but how little is yet understood of the habits and economy of birds, insects, and seeds, of fruits and trees, of shrubs and flowers, and of the thousand wonders of which the Creator has so lavishly furnished instances and provisions. I possess

tracts and treatises of the most erudite and elegant naturalists, who, the honor of science, are yet honored still more by the attachment of their labors and researches in the fields of horticultural and agricultural pursuits abroad. Where is the agricultural society in this country which recognizes among its officers the botanist, who studies the structure of the subjects of its operations, or the presence and influences of wasting diseases, produced or incident on disease and failure of the crop? Other branches of natural history should occupy their place and sphere, and the library which contains the best treatises on scientific husbandry as pursued abroad, ought to be explained and rendered serviceable by the lecturer at the annual meeting, or at stated periods. Is it not a shame and reproach that we borrow so much from abroad? Making ourselves still children in our avocations, by being indebted to others in other countries where soil and climate and atmosphere and the nature of labor all conspire to make the difference between us and those older countries so wide and distinct. And we reap our reward, in committing the saddest mistakes—nay worse, in making the most stupid of blunders, by confounding facts, and misusing names, and falling into errors in consequence at once ludicrous and fatal.

Then, again, the field husbandman having a larger area of operations, is tempted to experiment on newly-recommended seeds and fruits, which he finds too often of no value, while the horticulturist leaves to him who has the most acres the care and the pursuit of the experiment. If the same ignorance were suffered in the raising of stock, in breeding horses or crossing sheep, as obtains in raising crops from recommended seeds, how the scorn of the community would be turned upon the unfortunate experimentalists. Several species of moth produce very strong and durable silk, and some other creature beside, but who would rear the destructive larva of the one or the nests of spiders from eggs distributed by some officious and well-meaning but ignorant person? The nicest care and discrimination is requisite to determine the character of many species of moulds attacking vegetation; they look very similar, yet they are very diverse, some wholly harmless, others most insidious. Many an unfortunate insect

is inhumanly treated or killed because seen in bad company, and there only because it was seeking its food among other insects which were injurious. The birds have had the most eloquent panegyrics bestowed on their kindly labors, but how still in vain, until, as we hope, actual experiment here shall show the surplus of good over evil they can exhibit. All these things, and a myriad more ever occurring, are worth knowing; and as there are those whose tastes and pursuits lead them to investigate and know them, it were the part of sound wisdom to invite them to be counsellors in societies formed for the common good. It cannot be reasonably expected that any or every person shall possess all such knowledge; one may graft much better than I, but I may still be able to tell him the probable why and wherefore some sorts will grow upon a quince stock and some will refuse to be united; and though his knowledge of the *modus operandi* of making a plant thrive is better than mine, I can assure him, on the first glance, whether he is sowing a weed or a new sort.

The Massachusetts Horticultural Society, with a seemingly commendable foresight, in its constitution provided its botanical, zoological and chemical professorships. Although no thanks are due to it, yet by the State authorities the work of Dr. Harris, on "Insects Injurious to Vegetation," is from the pen of one of its officers; and other papers of similar character from time to time. In the earlier numbers and volumes of the Massachusetts Agricultural Journal, we find the ingenious and carefully-prepared papers of the observing Professor PECK of Cambridge. What knowledge has been obtained as to the history and habits of several of our most destructive insect foes, has been based upon, and is indebted to, these early observations. Now these were made by personal observations at home, and by personal care. Hence their value; and only home observations, by our own home naturalists or experimentalists, are of much or any value to us. We have a natural history of our own. Our plants, our weeds, our cultivated crops, our insects, our birds, our soils or atmospheres, and our winds, are local and peculiar. Scarcely anything is in common; rocks, peat meadows, sandy plains, loamy soils, waters, and rains and snows are not European or

British, but *North American*. Hardly a plant is common to both continents, and even the introduced weeds soon lose their transatlantic character. Thousands of the minutest forms of vegetable life, such as the fungi, many of which are the pest of the farmer and of the horticulturist alike, are exclusively *American*, and many of them are confined to sections only of our country.

While then, in the wide domain of natural history and in the geological features of a country, there is so much that is peculiar and new, it is not strange or singular that seeds and fruits and varieties of vegetables, such as the field roots and crops and grains and grasses, should be liable to the particular contingencies of local conditions. Those who attempt the fruit culture, know the reasonableness of this remark; and I shall therefore employ it for an illustration. Many seasons' trial and variety of soil only, have rewarded by the successful result the patience of long-delayed hopes, in some very estimable pear of European or British culture. It is not too much to anticipate the condition of things, when certain sorts of fruits will cease to be tried in our gardens from previous knowledge of the anticipation of failure, based on actual and certain data. If this is true in the pear, why does not the same reasoning hold in the root crops, or in the varieties of gramineous plants? These observations, however, are not made to deter experiment, for experiment is worth ten times more than any theory. Yet who would care to repeat, (through ignorance though it may be), the folly of sowing the seeds of a boreal climate in a tropical one, whose heat and atmospheric conditions convert its biennial character into the annual growth? It would not be much better than this, to expect that many plants, valuable abroad, would be valued here for the same properties; neglecting the particular conditions of the case. Thus observation the most extensive, and some knowledge of the varied aspects under which the vegetation of different agricultural countries is subject, is essential to guard against expenditures of time and money in the distribution or cultivation of seeds and grains and fruits.

It should be a great object of agricultural societies as well as of horticultural societies to gratuitously distribute, as far

as practicable, among its members, all new and really useful articles, and it might be the aim of such societies to be the mediums of National or State bounty. Many a farmer would prize more highly a dozen scions of a new fruit than a volume on foreign agriculture, or a dollar or two as a gratuity, and a paper of choice seeds is more valuable than a silver medal. Much of the mischief which arises from the indiscriminate scattering of seeds and roots around the country, would be thus avoided. There are certain vegetables, for instance, that are so ill suited to our climate that they are grown with the greatest difficulty. Many years ago I was requested by an intelligent and practical farmer to inform him of the name and nature of some strange-looking plants which he had raised from seeds sent him from Washington; he was in doubt whether they were *thistles and dandelions* or no, and he was equally astonished and chagrined to learn that the thistles were artichokes and the dandelions were endive,—the former to be boiled for the table something like a cabbage, and the other to be blanched and eaten as a salad. “What, eat thistle heads,” said he, and devour such a bitter thing, when lettuce is so much better?” Some seeds of the same lot produced *beets*, but they were all tops and had no roots, very ill adapted either for the table or for feeding out. Who does not remember the Tree corn, fitted only for a southern culture, if good for anything? And the Cesarean cabbage or kale, one plant sufficient to keep a cow, and two or three would save barn yard and hay stock? Not long ago, I was favored with the flowers and stem of a Spanish plant, sown with great care as a new spinach, but digestible only in the stomach of the most indigent or the most vagrant of animals. The chufas, or earth almonds, have received considerable censure; I have long been acquainted with them, many years before they were distributed from the Patent Office; and whoever loves to eat peanuts might have a hankering after these little rootlets—in both cases the task is somewhat porcine. Varieties of peas, long known to our farmers and gardeners and laid aside for better varieties, are received by favored individuals as especially excellent and *new* sorts. Grass seeds, fitted only for warmer parts of the country, where

the herbage lacks the softness and fineness of our pastures, are useless or worse than useless to us. Along our railroad tracks, straying from old cornfields and rye fields, and blooming late in autumn, is a caryophyllaceous plant, with succulent, needle-shaped leaves, called Spurry,—a worthless, insignificant, introduced weed, yet recommended for cultivation for feeding sheep. Its adaptation to the poor gravel of the rail-track bed may be something in its favor for poor gravelly soils elsewhere on the farm, yet we have better plants than it to sow there, and birch trees and pitch pines would yield a better crop.

The duty of your Committee having for its consideration "the distribution of seeds from the Patent Office," at Washington, leads me naturally into the train of thought now laid before us. The origin of the labors and avocation of this department of the Patent Office is unknown to me. I cannot but feel that the motive was praiseworthy, and the object was intended to be a good one. But towards a country of the magnitude, extent, and ever-increasing area of ours, spreading over such diverse geological strata and bounds, and claiming such different soils and subject to such distinctions of atmospheric conditions, some skill in the geographical distribution of plants should be in the possession and at the service of the person employed in introducing new or supposed to be new varieties of seeds and roots. Correspondence with scientific or industrial societies in distant States with the Patent Office might perhaps obviate many of the otherwise unavoidable difficulties now lying in the way, and save the introduction of species of plants liable to become the most worthless of weeds to the farming interests. It is evident that some better system should obtain somewhere, to render a good design the most available; or, if this is impossible, it would be far better to abolish this particular function of the office, perhaps, than to continue so much waste of time and means, and to so little purpose. We hold it to be the duty of a society like ours to take the matter into serious consideration, and, if possible, to help in devising a better and more profitable method of rendering available, to its greatest extent, anything that can be of service from abroad, or *from distant parts of our own coun-*

try, to our agricultural interests, in its various departments of skill and labor.

At several times I have called the attention of the Essex Institute, in its meetings, to this subject of the Patent Office method of gratuitous distribution of seeds, and have made it the topic of extended remarks. This society, located in Salem, has *its* horticultural department, and has been favored with envoys of seeds through the medium of members of Congress. With the single exception of a small scarlet radish, esteemed by some one who received from the Institute a portion of seed, the lots were valueless. On one occasion considerable parcels of well known and quite common flower seeds, put up in London and in the original packets apparently, were sent for distribution. Wheat of some well known variety, in little packets, was among other agricultural seeds, and bestowed on a section of our State where wheat as a crop is almost unknown. Mignonette seeds in considerable bulk for the purpose of sowing for the use of bees; melilot or sweet clover, which, rejected from gardens and fields in Essex County, grows almost spontaneously by our roadsides and frequently on rubbish heaps as a noxious weed; and similar articles, of which it has been difficult to find recipients. When we consider for a moment the unusual facilities enjoyed by our New England cities, especially those of Massachusetts, for the early introduction of every valuable seed, whether of field or of garden culture, the zeal and enterprise manifested towards our gardens and fields provokes a smile at the ignorance of friends of agriculture, in the want of a considerate regard for our needs or possible necessities in this line of individual or social industry. Thus the coarsest and meanest sorts are supplied us to supplant those well known and long tried; and a little better acquaintance with the botany of regions abroad, or with their agricultural resources, would prevent the trial of the Japan pea as an article of fodder—the vetch for food of cattle—a kind of lupin, likewise—the coarser grasses for pasturage, or their seeds to feed poultry—the stalks of the Chinese broom corn to supplant the more juicy and sweeter stem of the Indian corn as forage. There may be portions of the United States, perhaps, where these and

similar plants may possibly be useful ; certainly they are inapplicable to the advanced culture of Massachusetts, and her gardens blossom with every hardy exotic nearly contemporaneously with her sister gardens of Great Britain, thanks to the enterprise of the seedsmen of Boston, New York and Philadelphia.

In view of these circumstances, it has seemed to me that a good step could be taken towards indicating the true condition of our progress in horticulture and its kindred subjects, were it the duty of some special committee of our Societies to furnish lists of all newly cultivated varieties of fruits, flowers, seeds of the field and farm introduced to their notice from year to year. Such catalogues, either in MSS. of the Society's records, or these when printed from time to time, would exhibit and furnish much needed information. I regret that I have not myself made a similar record of the seeds which have come under my own eye, thus sent to societies or to individuals for the promotion of agriculture. This Society could do no better thing than for the future to register all such gifts, whether of seeds or of scions, roots, bulbs, or the like.

The attention to this subject has likewise been called by other writers, and among these the letter of David Landreth, a most practical as well as scientific seedsman, to the Commissioner of Patents, contains a great deal of valuable facts and suggestions. It is not a matter of private interest between seed growers and seedsmen and the official department at Washington, because, however privately or in a business manner they may possibly view it, the subject extends far beyond them. It helps to perpetuate the too extensive ignorance of, and almost culpable indifference to, the fundamental principles of all agricultural industry in those who direct agricultural concerns. Too much of this exists already—and while the anniversary addresses before such societies are delivered by merely scholarly men, or through political favor, rather than by the practical farmer, or by the investigator of the mysteries of the vegetable kingdom or of the capabilities of the soil, we shall fail to enlighten those who ought to be the most interested in what they should know : and all the real

advantages of chemical or scientific knowledge (for there are real as well as fictitious facts connected with the general subject) will continue to be regarded as rather matters of fancy or of theory, than of practical worth. "Of what use" is the expression of the argument, "to define by name every species of plant, to arrange in consecutive order every kind of organized life, from the minute speck of mouldiness or the tiniest bug, to the most gigantic of such forms?" And the pertinence of the query seems in favor of the doubt, until the spirit of such ignorance extends to sowing the farm or the garden with weeds and useless foreign trash—to repent, too late, at the want of a little wisdom to save us from much of such results. Some one has said "that a weed is a plant out of place," and an excellent definition it is. How many such misplaced plants a better knowledge of systematic botany would save us.

In the management of the duty assigned the Committee, this present report can be only preliminary. It remains for the Horticultural Society to avail itself of the best plans it can command to vindicate its sense of the relation it bears, in common with other similar societies, to the most enlightened advancement of agricultural interests. Such a duty is clearly its, and the way and manner must arise from judicious and careful considerateness. Trusting for one that our Society will not prove faithless to its interests in the highest advantages of the topic its labors conspire to advocate, I have committed to you, gentlemen, these my spontaneous thoughts on matters long dwelling in my mind, and trust that out of associated and harmonious concerns, wisdom to guide and prudence to direct may accrue.

POMOLOGICAL GOSSIP.

BRITISH POMOLOGICAL SOCIETY.—At the meeting of this Society, Sept. 9, there was a good show of fruits, particularly of new grapes, which appear just now to be attracting unusual attention among the English pomologists. We copy the following report on grapes:—

NEW GRAPES.—Buckland Sweetwater, by Mr. Ivery of Dor-
king. This has, on two previous seasons, been laid before the
Society, and on this occasion their previous good report of it
was fully confirmed. One very handsome bunch was exhib-
ited, which evinced in the short, compact, well-shouldered
bunch, the close relationship of this variety to the Hamburg
section. Several other bunches were exhibited for testing
purposes. They were all reported to have been produced in
a common greenhouse—camellias and other plants being
grown beneath them. It was considered worthy of taking a
place amongst useful grapes, and of the premium offered for
this class.

Mr. Wighton, of Cossey Hall, again exhibited his Seedling
Black grape. It was regarded as a variety likely to be of high
excellence, if proved to be a good keeper. Mr. W. reported
that the vine had been early forced this year in the same
house with Muscats, and other varieties receiving a high tem-
perature; that the fruit of the other varieties had been all
cut, or remained shrivelled on the trees, while that of the
Seedling was quite plump.

Mr. Melville, of Dalmeney Park Gardens, again sent speci-
mens of his Seedling Muscat grape, concerning which it was
anticipated that it would prove a useful variety; the berries
on the bunch sent being quite equal in flavor to those of Can-
non Hall, grown on the adjoining rafter and sent for compar-
ison. It was said to ripen three weeks earlier than the Can-
non Hall in the same temperature.

Mr. Rivers brought a dish of the Prolific Sweetwater, grown
in France, under the names of Gros Coulard, and Froc La-
boulage. This is a long-bunched white grape, with a thin
skin and nice flavor, the berry much resembling, in size and
form, that of the Buckland Sweetwater. It appeared to set
well, and was considered a useful variety, worthy of being
more generally grown. Some branches were exhibited, show-
ing the results of some interesting experiments of ringing the
bark of the wood while in a young state: with this variety
very slight difference was observable between the bunches and
berries on the branches so treated and on those which had
grown naturally; but Mr. Rivers described that on branches

so treated of the Muscat of Alexandria growing in the same house (a cool vinery), the berries were swelling and ripening much faster than on those which were not ringed. Mr. Rivers exhibited, from the same house, Chasselas Vibert, a variety of the Sweetwater section—all of which are called Chasselas in France—very nearly resembling the Prolific Sweetwater in size and form of bunch and berry, but attaining a warm amber color when fully ripe, similar to that of Muscat of Alexandria. The skin was thin, flesh sweet and juicy, seeds few, leaves more deeply serrated than the common Sweetwater. It was said to be one of the earliest and hardiest of its class, and to ripen as well on the open wall as in a cool vinery. These two varieties, with the Buckland Sweetwater, were considered well suited to displace the old shy-setting, straggling-bunched Sweetwater, as more worthy of cultivation.

Mr. Rivers also brought a dish of Early Black July, or Morrillon Hatif, from a board fence with a west aspect. This, though small, and not of first quality, is the earliest and one of the hardiest grapes suited for out-door cultivation. It is not so much known in this country as it deserves; for vines are often planted in ornamental gardens for the sake of their foliage; and early hardy kinds, which will generally produce eatable fruit, had better be used for the purpose than any other.—(*Gard. Chron.*)

DOYENNE' DU COMICE PEAR.—This new variety, which has fruited abundantly this year in our collection, is one of the very best pears of the season, which is November. The specimens were large and handsome, resembling somewhat, in appearance, the Swan's Orange, though not quite so large. It has already been described in a previous volume, (XVIII. p. 168,) from specimens sent to the Massachusetts Horticultural Society in 1851, by M. André Leroy. It fully sustains its reputation, and will, we think, when better known, be universally cultivated.

THE ANNA GRAPE.—This is a new variety, now first offered for sale by Dr. Grant, of Iona, N. Y. It grew from seed in the garden of Mr. Eli Hasbrouck, of Newburgh, and first fruited in 1851. Very fine specimens of the Anna grape were exhibited by Dr. Grant at the last session of the Ameri-

can Pomological Society, in New York, and, though not quite mature, the variety appeared to be one of good promise. As it has only fruited at Iona, where Dr. Grant states it is as early as the Diana, nothing can be said of its ripening in other localities.

Dr. Grant describes it as follows:—The bunches are large and loose, or moderately compact, on young vines, but on those that are mature, compact, shouldered, and symmetrical. Berries large, globular, translucent, and firmly adhering to the pedicels. The color varies from light amber in the sun to pearly white or green in the shade. The bloom is white and abundant, through which may be seen a few brown dots. It is surpassingly sweet, rich, vinous, and somewhat spicy in its flavor, and has a decided but fine and delightful aroma. It ripens quite as early as the Diana, and fully two weeks before the Catawba, hangs very late on the vines, and is not injured by severe freezing. For late keeping it is unequalled, and its raisins are not surpassed in quality by any foreign variety.

“In habit it is much like the Catawba, very healthy and vigorous; leaves very fleshy and firm, remarkably exempt from disposition to mildew, and ripens its wood earlier and more perfectly than any variety, and does not lose its leaves until it has matured its fruit.”

We tasted the specimens above alluded to, and, though not perfectly ripe, we do not hesitate to pronounce it a very fine grape. If it proves as early as the Diana, it will be a most valuable acquisition.

NEW-ENGLAND SHRUBS.

BY WILSON FLAGG.

THE CLETHRA.—After the flowers of the swamp honeysuckle have faded, in like situations we are attracted by the similar fragrance of the *Clethra alnifolia*, or Spiked alder, remarkable as one of the last in flowering of the New England shrubs. It is commonly from four to six feet in height, bears its white flowers in a long spike or raceme, somewhat resem-

bling that of the black cherry. It is found in wet and boggy places, and is one of the most common of our wild shrubs, coming into flower in the decline of summer, when other shrubs are maturing their fruit. The *Clethra* is not destitute of beauty, and is valuable for its fragrance as well as for the late appearance of its flowers. The foliage of the plant is homely, resembling, as its name implies, that of the common alder. It submits readily to cultivation, and is improved in its florification after its introduction into the garden.

Other species of the *Clethra* are abundant in the Southern States, where their flowers make a fine show in the latter part of June. Several of these have been introduced into British gardens, where they are hardy and thrive well in the open air. This plant has been called Sweet Pepper bush, from the sweetness of its flowers, and the superficial resemblance of its fruit to pepper corns. This is better than the majority of the names which our people have given to indigenous plants, which are for the most part singularly uncouth and unpoetical. The picturesque attractions of the *Clethra* are not to be despised, especially in August, when its long racemes of white flowers project from the masses of foliage that border the wooded swamps, and make a fine contrast with their deep verdure.

THE CORNELL.—Next to the *Viburnums*, the *Cornels* might be allowed to take rank in importance among what may be called the homely shrubs, or such as are not showy in the colors or size of their flowers. These two genera of shrubs are indeed very liable to be mistaken for each other, each having opposite leaves and branches, and producing their inconspicuous flowers in cymes or umbels. Their botanical characters, however, are quite distinct.

The *Cornels* are graceful and rather prim-looking shrubs, having a hard, close-grained wood, and containing in their bark a large proportion of the bitter principle of the *Cinchura*. They delight in the cooler regions of America, seldom extending far into the southern temperate zone. Some of them are remarkable for their shining red bark, which is very noticeable in the winter landscape. The *Cornelian cherry* is an exotic species of this genus, valued for its bright scarlet

fruit. The name of this genus is said to be derived from the Latin *Cornu*, signifying hornwood, on account of its great hardness. The Greeks dedicated this tree to Apollo, probably on account of the usefulness of its wood in works of delicate sculpture. It is still used extensively by the engraver on wood, and for the manufacture of small articles which are to be turned or carved. The Flowering dogwood (*Cornus Florida*) is the most important of this tribe of plants, both as an ornamental shrub and on account of its value in the arts. In the South and West, there are vast forests of this shrub, forming, in the month of May, acres of almost unvaried whiteness, from the profusion of its flowers, which appear before the leaves are expanded. The flowers grow in heads, or sessile umbels, enclosed in a large, spreading involucre, which might easily be mistaken for the corolla of the flower, and the florets within for the parts of fructification. About the first of June these trees are very beautiful, their branches and budding leaves being almost entirely enveloped in a mass of pure white flowers. The Florida cornel, though not abundant in Massachusetts, makes a fine show when in flower, dotted about, here and there, amidst the fresh green foliage of other trees of the forest. The leaves of all the cornels become very brightly tinted with hues of scarlet and purple in the autumn.

The little Dwarf cornel, whose flowers resemble those of the dogwood, is very common in the woods and in bushy pastures. It is an herbaceous plant, consisting of a simple stem issuing from a sort of subterranean vine, and surmounted with a single whorl of four or six ovate leaves, containing an umbel of flowers in the centre. The flowers of this species are usually gathered by children with the first bouquets of wild flowers of the season.

The other species are valuable shrubs, though not remarkable for their flowers. Conspicuous among these is the Red Osier (*C. stolonifera*), distinguished, after the fall of the leaf, by its bright red stems and branches and its white fruit. The Silky cornel (*C. sericea*) has stems of a deep purple hue, though its recent shoots are green, and its leaf and fruit stalks invested with a silky down. The Panicked cornel (*C. pani-*

culata) is a slender species found in dry places, by roadsides, and in the borders of woods, and is rather showy when in flower. The berries when ripe are white, and the fruit stalks of a pale scarlet. Another species, the Round-leaved cornel, (*C. circinata*), bears fruit of a pale blue, and the *C. alternifolia* has berries which are purple. These shrubs are hardly less important than the virburnums in giving character to our fields, and adding variety to the appearance of our shrubbery both in summer and winter.

The industrious Grubbinol, whose ideas of taste are satisfied by the practice of keeping down every wild shrub that shows its head in any of his borders, and who considers it one of the marks of a "model farmer" to allow no green shrub to deface the beauty of his nicely-laid stone walls, and who would tolerate the poison sumach as readily as a blueberry bush, defrauds nature of all these valuable shrubs, and annually consigns them to the bonfire. In the meantime, cut-worms, beetles and the larvæ of various insects are destroying his crops, because the birds, who would have extirpated them, can find no shelter in his fields. Thus nature takes revenge upon him who, for a few additional pumpkins, denies her a foothold in the borders of his fields, already too large for his efficient cultivation.

THE SPIRÆA.—There are but two *Spiræas* among our indigenous plants in Massachusetts, unless the Nine bark is found here, a plant which I have never discovered in the fields. The *Spiræa salicifolia*, or Bride-wort, commonly known as Meadow-sweet, is very frequent in pastures and on the edges of woods. This is a slender branching shrub, bearing a profusion of willow-like foliage, down almost to its roots, and a compound panicle of white, purplish flowers at the ends of the branches. It is well known to all who are familiar with the appearance of nature, being very abundant in the whortleberry pastures, in company with the low laurel and the common wild rose. This plant retains its leaves and their verdure to a late period in the autumn, until almost all other plants have shed their leaves.

The flowers of the Hardhack are very conspicuous by roadsides, especially in low grounds. It seems to delight in the

borders of rustic footpaths, growing in profusion by the sides of stone walls, where its purple spikes may be seen with the nodding plumes of the golden rods waving in the wind. The uprightness of the plant, and the pyramidal form of its panicles of flowers, have caused it to receive the name of Steeple bush, from our church-going ancestors. One of the *Spiræas*, (the *S. ulmaria*,) is said to yield a fine flavor to warm water, and many of them are cultivated in England for the beauty of their flowers.

THE WILD ROSE.—In my descriptions of New England shrubs, I must not omit the rose, the most celebrated and the most beautiful of flowers, of which our fields and woods contain several indigenous species, possessing great beauty and fragrance. The first is the Swamp rose, (*R. caroliniana*,) a tall shrub, found in swamps, by the borders of ponds and in other wet places, but not, I believe, in bogs. The stems and small branches are of a reddish color; the flowers are in small clusters, of a deep rose color, and the fruit is of a bright scarlet. Another more common species (*R. lucida*) flowers very early, and is found in upland pastures, and in almost all neglected fields, often forming beautiful natural hedgerows by the sides of fences, and growing in other places in plats, sometimes covering several square rods. Its blossoms are somewhat paler than those of the preceding species, but finely scented. This species often produces a few blossoms in October. I have found also, on some of the hills in Beverly, a variety with white flowers.

Another less common species is the Shining rose, (*R. nitida*,) so named from the glossy character of its leaves. This variety has a very prickly stem, and is found in low grounds.

Of the Sweet Briar there are two species or varieties, the common Sweet Briar, or Eglantine, introduced from England, (*R. rubiginosa*,) which attains the height of six or eight feet, and may be trained to a much greater height. The flowers are of a bright rose color, and the fruit scarlet.

The small-flowered Sweet Briar (*R. micrantha*) is supposed to be indigenous. This is the one that is most commonly found in the woods, attaining a great height where it finds support. Its leaves and flowers are both smaller and more

sweetly scented than those of the common European Sweet Briar. The flowers are of a pale rose color, approaching to white. I have seen it trained naturally upon a red cedar, forming, when in flower, a magnificent spectacle. The rose has a natural tendency to run into varieties, and this renders it difficult to distinguish species.

THE PYRUS.—It would be difficult for any one who is not a botanist to perceive the relationship of the common pear tree and the Mountain ash; yet the latter is now reckoned as belonging to the genus *Pyrus*, having been transferred from the place it formerly occupied in the genus *Sorbus*. Indeed, the affinity between the pear and the Mountain ash is made evident by the fact that scions from the pear succeed well when grafted on this tree. The American Mountain ash (*Pyrus americana*) seems to be only a variety of the European species, having smaller fruit of a deeper red, and larger leaves. In England it is called the Roan or Rowan tree, and Quicken. It has also received the name of Witcher, from its supposed influence in nullifying the power of evil spirits. It is a handsome tree, with pinnate leaves, smooth bark, alternate branches, and bearing its flowers in flat, terminal corymbs. We rarely see it wild in Massachusetts, but it is abundant in the woods on Wachusett Mountain.

The *Pyrus arbutifolia*, or chokeberry, is a very humble shrub, bearing its flowers, like the Mountain ash, in terminal corymbs. These flowers are white, with purple anthers, that afford them a very lively look by contrast. This is a peculiarity likewise of the blossoms of the common pear tree, which always have white petals, and are thereby distinguished from the blossoms of the apple tree, whose petals have a tinge of crimson.

The Chokeberry grows wild in all neglected fields and woodsides. Though humble and half concealed by the other shrubs that grow near it, it is possessed of a great deal of beauty, and its blossoms admit easily of being bound in bouquets. Hence it is usually gathered by young people in their rambles during the last week in May. The fruit, though excessively astringent, is not ill-flavored, and hangs in conspicuous purple clusters among the whortleberries, for which it is easily mistaken.

THE AMELANCHIER.—The Amelanchier, of which there are several varieties, formerly described under different generic names, is now considered a distinct genus, and the different varieties are classed as one species, the *A. canadensis*, or June berry, called also the Shad-bush. This is a northern shrub, and is found in perfection in the region about Hudson's Bay, where it becomes a tree of considerable size, and bears a fruit which is highly valued and extensively used by the people of that country. Nature reserves certain gifts for the exclusive benefit of every clime, however inhospitable. While the tropics abound in the fruit of the date and the orange, and the temperate regions in that of the grape and the still more valuable apple and pear, she has caused the Amelanchier, which in our latitude is an inferior shrub, to attain the size of a tree in the cold region of Labrador, and has suspended upon its branches a fruit unsurpassed by any kind which has not been improved by cultivation.

This plant is described in Bigelow's *Plants of Boston*, as the Swamp *Pyrus*, and is called Shad-bush from its flowering simultaneously with the arrival of shad in our rivers. The Amelanchier furnishes a remarkable instance, in the different names applied to it, of the indecision or pedantry of botanical science. By Linnæus it was described as a *Mespilus*; its name was changed to *Avonia* by Persoon; to *Pyrus* by Willdenow; and it has finally been removed from all these positions by Dr. Hooker, and made a distinct genus, under the name of Amelanchier. It is a pity that the professors of science should bring her honest claims into disrepute, by emulating the uninstructed multitude in their habit of giving to plants a variety of names.

THE HAWTHORN.—There is no shrub, except the rose, more celebrated in English pastoral literature than the Hawthorn. In the mind of a New Englander it is not associated with the same pleasant scenes and customs which have made it familiar to the inhabitants of Great Britain. We have stone walls in the place of the English hedgerows, and the few hedges which are to be seen in this country are made of some inferior shrub, because it has been believed that the hawthorn would not succeed well as a hedge plant in New England. Beside

the English hawthorn, which has been naturalized here, there are several native species of great beauty. These are regarded, by English cultivators, as the most ornamental low trees which have been introduced into their gardens and shrubberies. They are remarkable for the beauty both of their fruit and flowers, the latter being generally white, though there are varieties of rose color. The color of the fruit varies from a light yellowish green and yellow, through all the gradations of orange and scarlet to crimson and purple. There are foreign species with berries not larger than small peas, while those of some of the Mexican hawthorns are as large as a butter pear. The American species are valued for the fine tints of their foliage before it falls. Mr. Emerson enumerates four species as common in Massachusetts: the *C. crus galli*, with fruit varying in color; *C. tomentosa*, with large orange-colored fruit; *C. punctata*, with scarlet fruit, having grayish dots, and the *C. pyrifolia*, distinguished for its large and fragrant flowers and wide spreading corymbs and yellow fruit. This is a very common shrub and worthy of cultivation.

FLORICULTURAL NOTICES.

THE CHRYSANTHEMUM.—Notwithstanding the almost perfect indifference with which our American amateurs appear to view this beautiful flower, it is a very great favorite with the English cultivators, and is deservedly attracting universal attention this year. The Stoke Newington Chrysanthemum Society was to hold its twelfth annual exhibition on the second and third of November, when four prizes, of the value of five guineas each, were to be awarded. At the Crystal Palace a show was to take place on the sixth of November, when large prizes would be awarded for chrysanthemums; and at the great show of the London Horticultural Society, Nov. 17th and 18th, eighteen prizes were to be awarded for this flower, varying from £1 to £3 each. Some idea may thus be learned of the estimation in which the chrysanthemum is held abroad. Why is it that such a truly beautiful autumnal flower is so

sadly neglected here? Is there any plant which contributes more to the decoration of the parlor or conservatory for six weeks of the most dreary season of the year? Speaking for ourselves alone, we know of few plants which deserve more attention. Why will not our Horticultural Societies do something to elevate the chrysanthemum to its proper place? The Massachusetts Horticultural Society offers one or two prizes for them, but they are so extremely small it is no inducement for our cultivators to compete. Why not have a grand Chrysanthemum Exhibition, which we have not the least doubt would be as attractive as any show of the season? By the offer of liberal prizes, both for plants in pots and cut flowers, there would undoubtedly be plenty of contributors, and the chrysanthemum would then be grown in the perfection of which it is susceptible, and one of the finest of decorative plants be seen in all its beauty. We trust this will not be overlooked in the prizes to be offered the coming year.

NEW TORENIA.—A new and beautiful variety of the Torenia has been produced by the London florists. The tube of the corolla and its eye are of an intense purple violet; the two top lobes are the same color, fading at the edge into pure violet; the lower is white, with a purple, oblate blotch at the point. "The variety," says the Gardeners' Chronicle, "puts the old original kind quite out of the field."

426. RHODOENDRON GRIFFITHIA'NUM *Wight*. VAR. AUCKLANDI. LORD AUCKLAND'S RHODODENDRON. (Ericææ.) Sikkim Himalaya.

A greenhouse shrub; growing six feet high; with white flowers; appearing in spring; increased by grafting; grown in heath soil. *Bot. Mag*, 1859, pl. 5065.

A magnificent species, which is considered, from the great expanse of its snow white flowers, the finest of the genus. It was introduced by Dr. Hooker, from Sikkim, in 1849, and flowered last spring with Mr. Gaines of Wandsworth. It forms a superb shrub, branching from the base upwards, with leaves six to ten inches long, bright green, edged with yellow, coriaceous and firm. The flowers are very large, measuring seven inches across, and are produced in corymbose panicles of four to six each. In size it surpasses the *R. Dalhousiæ*, and must rank as the finest of the Sikkim Rhododendrons. (*Bot. Mag.*, Aug.)

427. *AZA'LEA OVA'TA* Lindl. OVATE-LEAVED CHINESE AZALEA. (Ericææ.) China.

A greenhouse shrub; growing two feet high; with pale purple flowers; appearing in spring; increased by cuttings; grown in heath soil. Bot. Mag., 1858, pl. 5064.

A pretty species, found by Mr. Fortune in Northern China, and sent home to the Horticultural Society. It is quite different from the other Indian kinds, having small, ovate, evergreen, coriaceous leaves, and axillary, solitary peduncled flowers, of small size and of a pale purple. They are produced in great abundance, and produce a pretty effect. It is a slow-growing species, half hardy in England, and will succeed well in any cool greenhouse. (*Bot. Mag.*, August.)

428. *SAXI'FRAGA PUPURA'SCENS* Hook. PURPLE HIMALAYAN SAXIFRAGE. (Saxifrageæ.) Sikkim Himalaya.

A hardy plant; growing one foot high; with purple flowers; appearing in spring; increased by division of the roots; grown in good garden soil. Bot. Mag. 1838, pl. 5066.

A very fine species, in general habit resembling the common *S. crassifolia* of our gardens. It differs from it, however, and is far more beautiful. The leaves are bright glossy green, elegantly margined with red, and the entire stem and inflorescence are of a deep, bright, vinous red purple. It is a striking and showy plant. Dr. Hooker discovered it in Sikkim Himalaya, growing in wet places at an elevation of 10,000 to 14,000 feet, and it will undoubtedly prove hardy in our climate. (*Bot. Mag.*, Aug.)

429. *ISME'LIA BROUSSONE'TII* C. H. Schultz. BROUSSONET'S ISMELIA. (Compositæ.) Canary Islands.

A half-hardy plant; growing two feet high; with pale lilac flowers; appearing in May; increased by cuttings; grown in light rich soil. Bot. Mag., 1858, pl. 5067.

A showy plant, with the foliage of a chrysanthemum, and large, single, aster-like flowers, of a pale lilac tint, with golden florets and a purple disc. It was found in the Canary Islands, in mountain ranges at an elevation of 3000 feet. Dr. Hooker calls it "a really handsome plant," and, when in bloom, had quite a striking appearance in a conservatory. It might prove a useful bedding plant, its large starry flowers showing to good advantage in the open border. It will probably prove half hardy. (*Bot. Mag.*, August.)

430. *CAMPA'NULA STRIGO'SA* *Runel.* STRIGOSE BELLFLOWER.
(Campanulaceæ.) Syria.

An annual plant; growing six inches hi. h.; with blue flowers: appearing in summer: a native of Syria; increased by seeds; grown in common garden soil. *Bot. Mag.*, 1838, pl. 5038.

A very pretty annual species, with bright blue flowers, and small oblong ovate leaves, quite covered, as well as the stems, with white, pellucid, patent hairs. It grows only five or six inches high. At Kew it was raised and flowered in a pot, in a cool frame; but in our warmer climate it would no doubt prove a half-hardy annual, flowering a greater part of the summer. (*Bot. Mag.*, Aug)

THE PHYGELIUS CAPENSIS.

BY THE EDITOR.

EVERY easily-cultivated, free-blooming, half-hardy plant is a great acquisition. Unlike the more tender exotics, they can be wintered without the aid of a greenhouse, and hence may decorate the grounds of the less wealthy, who do not possess so desirable an appendage to a modern garden. A frame or even a cool cellar will keep all this class of plants in good condition till the season arrives for planting them out in the open border. Such are the *Pyrethrums*, *Pentstemons*, *Daisy*, *Auricula*, and many others, well known favorites with many amateurs, who feel amply rewarded for the little extra labor which they may expend upon their preservation.

The *Phygélius capénsis* is one of the same class, quite hardy in Great Britain, but requiring the protection of a frame in our more severe clime. It is a native of the Cape of Good Hope, where it was found on the Witbergen Mountains by M. Drége, a German collector. In general appearance it resembles a *Pentstemon*, with a foliage like some of the *Salvias*. It is perennial. The stem is erect, branched at the base, quadrangular, and grows to the height of three feet. The leaves are oval, cordiform and crenulate on the edges, nearly two inches long, and supported by a short peduncle. The stem is terminated with a large panicle of tubular, bell-

shaped, scarlet flowers, which are suspended in a manner extremely graceful. The limb of the corolla is divided into five lobes. Our engraving (FIG. 24), though on a reduced scale, will convey a good idea of the plant.



24. PHYGELIUS CAPENSIS.

The *Phygelius* is a very great addition to our gardens, and is destined to become one of the most popular and admired bedding plants, flowering as freely as the *Salvia*, and possess-

ing the advantage over it of being nearly hardy, and withstanding rougher treatment during winter; while its showy reddish scarlet flowers, displayed in great profusion till severe frosts injure their beauty, render it invaluable as a late blooming plant. Our specimens, the present year, were planted out in the open border in June, where they were one mass of bloom throughout the autumn. In October they were taken up, potted, and placed in a cool greenhouse, and they are now, Nov. 20th, still flowering, forming a pretty contrast with the chrysanthemums, veronicas and other plants, which decorate the conservatory at this season.

The propagation and cultivation of the *Phygellus* is very simple. Young plants may be raised from cuttings in March or April, in the same manner as the *Salvia*. These should be potted off, as soon as rooted, in a good compost of loam, leaf mould, and a sprinkling of sand, keeping the young plants in a half-shady situation until they acquire strength, when they may have a shift into larger pots, and be gradually hardened off in frames. In May, or as soon as all danger of frost is over, they may be turned out into the open border, where they will bloom from August until October.

Upon the approach of hard frosts, the plants should be taken up and potted carefully, and placed in the greenhouse or parlor, where they will continue in beauty for a long time. When their flowering is over, the tops may be cut down to within a few inches of the root, and the plants removed to a cold frame, a cool cellar, or the coolest part of the greenhouse. Here they will need but little attention till the returning season, when they may be again turned out in the open ground, and the second year will form very large and superb specimens, enlivening the border with their gay little scarlet bells, when the early frosts have cut off many of the more tender flowers.

As a pot plant we doubt not it would form a fine object for the decoration of the greenhouse, grown with the same skill that chrysanthemums and similar plants are now cultivated.

REVIEWS.

THE HORTICULTURAL MONTHLY, a Journal of Rural Affairs.
Morrisania, N. Y. : October, 1858.

THE GARDENERS' MONTHLY. Philadelphia: Nov. 1, 1858.

We have before us two new Gardening papers, bearing the above titles, one from New York and the other from Philadelphia; the Horticultural Monthly, a quarto sheet of eight pages, and the Gardeners' Monthly, a folio sheet of the same number. Both are filled with interesting intelligence, and we hope will do good service in directing attention to horticultural science, which is fully in need of all the aid which can be brought to bear upon it. Save the single department of fruit growing for "immense profits," we think a gardening taste in our country has not kept pace with the general intelligence of the people. We commend both of the above papers to the attention of all who are interested in rural art.

THE ILLUSTRATED ANNUAL REGISTER OF RURAL AFFAIRS FOR
1859, with fifty engravings. No. 5. Albany, N. Y.

The Illustrated Annual, issued from the office of the Country Gentleman and Cultivator, by Messrs. Tucker & Thomas, forms a very interesting little volume. It contains a fund of information on the general subjects of farm and garden management, gleaned from all sources, with original essays on leading matters in rural art and agriculture generally. It is issued in a neat shape, and embellished with numerous engravings.

THE RURAL ANNUAL AND HORTICULTURAL DIRECTORY for 1859,
with several engravings. No. 4. Rochester, N. Y. .

Similar in its objects and aims to the Illustrated Annual, it is filled with valuable articles on all subjects relating to the cultivation of the farm and garden, and the management of cattle, poultry, &c. Published by Jos. Harris, proprietor of the Genesee Farmer.

General Notices.

SIKKIM RHODODENDRONS.—Of all importations of really good things into Great Britain for the last quarter of a century, these Rhododendrons stand preëminent. Every horticultural periodical teems with new things, whose praises are as varied as the things themselves are different; yet generally are summed up with this, that "they ought to be in every collection." Yet what becomes of them? If they pass into a few collections how soon is it to pass away forever. Like the last year's music or the last year's clouds, their place is speedily supplied by newer introductions or newer creations, in their turn as speedily to pass into oblivion. It is not so with the Sikkim Rhododendrons. The sensation excited by the glowing descriptions of them by their distinguished discoverer, great as it was at the time, was not half commensurate with their merits. As every year now brings some new member of this family into bloom; these descriptions have not only been found warranted, but in many instances found to fall short of the reality. In neither his pencil nor his pen has Dr. Hooker outstepped the truth or modesty of nature. In this Sikkim group how varied are the individuals in their outline, aspect, and every several feature from each other; and how distinct are they, as a whole, from all others of the family previously known. Who, looking at *R. Falconeri* and *R. argenteum*, or at *R. Edgeworthi* and many others, would have regarded them as belonging to the same genus with our *R. ponticum*, *R. catawbiense*, and others previously known and cultivated in Britain? And as they have successively shown their inflorescence, from the tiny yellow *R. cleagnoides* to the gorgeous *R. Dalhousiæ*, how have they not delighted and astonished all admirers! Each comes forth in a grace and beauty never realized till then in their tribe. Not only in color and in size have the flowers excelled the drawings and descriptions given by Dr. Hooker, but many have that quality, so rare in the race, of fragrance superadded. For not only is there perfume in the *R. Dalhousiæ*, but in *R. Maddenii* and *R. Edgeworthi* to a very high degree, the odor of three blooms of the latter being sufficient to scent a whole greenhouse.

And they have for the most part the further advantage of being equal to our climate. Of some 30 species I am not aware of more than five or six which are not hardy. And I have had the *R. Falconeri*, a variety of *R. argenteum*, and *R. lanatum*, standing all last winter unprotected in my open garden; the former having stood there for two winters.

And for never-failing ornament, what one is there of the whole range of Rhododendrons equal to *R. ciliatum*, which flowers most profusely with all and under all circumstances every year? I may remark on this species that Dr. Hooker's drawing and description have been much outdone, as well by the size and elegance of the blooms, as by the whole character of the

plant. In like manner the elegance of form in the bloom of *R. Dalhousiae* was not nearly attained in the drawings.

In a word, I am not aware of Dr. Hooker having done more than justice to any one of the numerous species discovered and collected by him at so much trouble, peril, and expense to himself in these wild ranges of the Eastern Himalaya, which till traversed by him were unexplored, so far as I can find out, by any European traveller or naturalist. If Dr. Hooker has had no other requital for his arduous labors in that new field, he has the high merit of having done more for our gardens than any other living man. For who can speculate upon the gorgeous display of whole banks of the yet unbloomed—unbloomed I mean in Britain—*R. fulgens*, which, whether for the glorious effulgence of its deep scarlet blossoms, glowing like fire in the morning sunlight, or the singular tint of its rich verdigris-green foliage, render it, as Dr. Hooker observes, the most striking of plants in its native ranges; or upon the scarcely less glowing *R. Campbelli* and *R. Thomsoni*, all hardy as our native Broom?

I have myself bloomed this bygone spring the *R. Thomsoni*, and I can vouch for the fidelity of Dr. Hooker's description and drawing of this species. The flowers had all the depth of crimson and elegance of shape represented by him; and with me the truss in place of eight had nine blossoms, all chiselled-like in appearance, a condition due to their great substance.

I also bloomed this bygone summer the *R. Maddeni* and *R. "shrubby Alpine,"* the blooms of the latter being of pale straw tint, and of an elegance in point of shape I have never seen equalled in the genus, being nearly semi globular, having the limb recurved so as to give the bloom the outline of an antique bell. The *R. Maddeni* continued in bloom with me for six weeks or two months, the trusses blooming in succession. The bloom of this species is likewise truly fine, large, of great substance, and nicely scented.

But it is not because these magnificent species will in themselves render our lawns and gardens gorgeous that the country owes so much to Dr. Hooker. They are, as they successively emerge into inflorescence, made the parents of other races, which like the breeds reared from the *R. arboreum*, will, in due season, perhaps even supersede their originals. How many are at work and how many crosses may already have been effected I do not know. But it would be very interesting and instructive were the efforts of the various parties so engaged duly recorded in the *Chronicle* or other established horticultural periodical, for the benefit of all. I may here be permitted to observe that among others I have effected crosses as follows:—

1. Between *R. ciliatum* × *R. Edgeworthi*, the plants being now 18 inches high with very downy bright green foliage, a very distinct intermediate.

2. Between *R. ciliatum* × *R. arboreum*; a very difficult cross to effect, the only plant now alive being 9 inches high and having smooth, shining foliage, not so deep in color as those of the preceding cross.

3. Between *R. glaucum* \times *R. formosum*; plants one foot high; a distinct intermediate.

4. Between *R. formosum* (syn. *R. Gibsoni*) \times *R. Dalhousiae*, upwards of two feet; a very easily managed cross, whose seeds vegetated most abundantly; and several others.

But some of the new species are very stubborn and refuse to cross; the *R. Maddeni* in particular, which will not intermix with any of six or seven species and hybrids I have tried upon it. I fear the same holds true of the *R. Thomsoni*, which I crossed profusely, but by an accident the crossed umbel was broken off before there was full time to test its fertility, yet with its pollen I have crossed others. Though I had three plants of the *R. Dalhousiae* all in bloom at the same time I could not succeed this season in making it cross upon others or become the subject of a single cross. But as to the former, it is proper to remark that there appeared no true pollen in the anthers; but the stigmas being perfect, I could not account for its not being crossed. Strange though it may seem, I have had experiences of this sort before in plants, which though obstinate one season, so as utterly to baffle all my skill, yet in another season I have found abundantly fertile. Such I found to be the case in a fine plant of *R. ciliatum*. The law for this is yet to be found out; that such anomalies exist I have had frequent proofs.

On this head I may yet add another instance where my failure has been not merely occasional but continuous. The first of these Sikkim species I succeeded in blooming was the heath-like thing termed *R. eleagnoides*, allied to if not identical with *R. lepidotum*. It bloomed with me in March, 1852, being, so far as I can learn, the first time it bloomed in Britain. Eager to make the most of my opportunity, and hopeful to work out a better yellow, I used its pollen freely on various of its congeners, from the diminutive *Rhodothamnus chamaecistus*, which it much resembled, upwards. At last I succeeded in crossing the *Rhododendron ferrugineum* with its pollen, and from this cross I bloomed plants distinctly intermediate, having straw-colored flowers tinged with pink. But while I so succeeded, I could never invert the cross, or make the *R. eleagnoides* become fertile from any cross whatever. All who have had their hand much in use in this way may have had similar results to record—and it is most instructive to note them. Yet none should be discouraged from repeating the attempt. For there are seasons and skiey influences, which, rightly improved, may lead, as I have found, to more successful results. But here I cannot follow up these theories.

Since my object in this letter is to direct attention to the importance and value of Dr. Hooker's group of novelties, with a view to their more immediate results in horticultural decoration, I would now respectfully solicit through your columns, from others growing them, some particulars of what they have already effected by blooming and hybridizing them, and what they may have in their power to do from individual unbloomed species which they may have set for flowering in the coming year. I may observe that I possess myself no less than five fine plants of *R. niveum*, set, some

of them, with five and six flower-buds of such fine form and size as to give promise of a truss of surpassing elegance. I have likewise one plant of the *R. barbatum*, not less unmistakably set for flower. I have again also the "shrubby Alpine" so set, as also three or four new species from the Kamason Ranges of the Himalayas. Among all these I may not unreasonably expect new elements of form, fragrance and beauty to be incorporated with others to reproduce a still more perfect whole in the progeny.

And when the hybrids, now many of them far advanced, successively bloom, let these be communicated to your Journal, with flowers or photographs (now so easily taken), and their merits made known. I have long thought that much might be accomplished if such communications were faithfully made at the time. How profitable to know even the failures, by which much useless labor and anxiety might be saved.—(*Gardeners' Chron.*, 1858, p. 780.)

THE CHINESE YAM.—I have grown this successfully for the last three years, and I coincide with the opinion you expressed in a recent number, that the plant may be improved, and its utility extended by cultivation. The first year that I obtained the yam, as the sets were small and weak, I had them planted in a cucumber frame, where they had for a short time the advantage of a little heat; the result in the autumn was a number of well-developed tubers, the weight of which, in the aggregate, was estimated to be equal to an ordinary crop of early potatoes, grown under similar circumstances. The second year the sets were started in heat and planted in the open ground in June, with the ridge cucumbers, on a bed made up in the usual way with lawn sweepings, cabbage stumps, and garden rubbish; the bottom heat given by this mass of fermenting matter evidently suited the habits of the yam, the plant grew luxuriantly and produced some remarkably fine tubers; these tubers had penetrated to the very bottom of the trench, which was two feet six inches in depth.

I have again this year associated the yam with the ridge cucumbers, and they present a healthy and vigorous appearance; but by far the most promising plants are some which have sprung from the tubers left in the old bed of the year before; these grew so luxuriantly that I was induced to afford them the support of stakes, which they speedily clung to and covered. I am disposed to imagine that I shall have some very large tubers from these plants.

The elegance of the foliage of the yam and the rapidity of its growth led me to employ it as an ornamental climbing plant, and last year two sets were planted and their slender shoots trained over a trellised porch. The roots remained undisturbed during the winter, and this year the plants made a more vigorous growth, covering the same trellis, which is eight feet high and as many wide, with a profusion of graceful foliage. Within the last month the yam has blossomed abundantly, and in the exceeding sweetness of its tiny, unattractive racemes of flowers, it has revealed a quality which I have not seen noticed, but which will make it worthy of association with the more elegant and ornamental objects of the gardener's care.

I had nearly omitted to state that the plants left in the old ridge cucumber trench have also blossomed this season, but under a crowd of foliage the bloom has been in a measure obscured and destroyed; the beauty of the plant is best displayed when trained over an open trellis.—(*Gard. Chron.*, 1858, p. 781.)

THE DAHLIAS OF 1858.—The great National Dahlia Show in London was held at St. James Hall, on the 23d and 24th of September. It was a great gathering of the best dahlia growers and the finest flowers in the kingdom. As the varieties which obtained the prizes show what are the most popular and admired sorts, we copy the following report of the awards:—

Best 50 Dissimilar Blooms—To Mr. C. Turner, for *Triumph de Pecq*, *Admiral Dundas*, *Deutsche Wurde*, *Lord Cardigan*, *Preëminent*, *Robert Bruce*, *Peerless*, *Flirt*, *Triomphe de Roubaix*, *Miss Watts*, *Touchstone*, *Annie Salter*, *Lord Bath*, *Princess Royal*, *Pandora*, *Elizabeth*, *Lady Franklin*, *Perfection*, *King*, *Lord Fielding*, *Mrs. Church*, *Village Gem*, *Royal Scarlet*, *Lady Popham*, *President*, *Commander*, *Satirist*, *Harbinger*, *Cherub*, *Rosa Bonheur*, *Lord Palmerston*, *Alice Downie*, *Sidney Herbert*, *Rachel Rawlings*, *Emperor*, *Orb of Day*, *Midnight*, *Major Fellowes*, *Goldfinder*, *Exhibitor*, *Lollipop*, *Conqueror*, *Hon. Mrs. Trotter*, *Grand Sultan*, *Miss Pressley*, *Mrs. Legge*, *Col. Wyndham*, *Venus*, *Dr. Gully*.

Best 12 Fancies, (tipped)—To Mr. C. Turner, for *Baron Alderson*, *Mrs. Hansard*, *Elizabeth*, *Countess of Bective*, *Jupiter*, *Duchess of Kent*, *Triomphe de Roubaix*, *Mrs. Kean*, *Empereur de Maroc*, *Duchesse de Brabant*, *Lady Paxton*, *Madame Albani*.

Best 12 Fancies, (striped and spotted)—To Mr. C. Turner, for *Flirt*, *Car-nation*, *Marc Antony*, *Oliver Twist*, *La Delf*, *Souter Johnny*, *Conqueror*, *Charles Perry*, *Glorie de Kain*, *Village Bride*, *Comet*, *Beauty of High Cross*.

12 new Dahlias. The ten guinea cup, offered by Mr. Warren, was won by Mr. C. Turner, with *Mrs. Church*, *Standard Bearer*, *Alice Downie*, *Village Gem*, *Elizabeth*, *King*, *Miss Pressley*, *Miss Watts*, *Loveliness*, *Peerless*, *Commander* and *Marion*.

STOKE NEWINGTON CHRYSANTHEMUM SHOW.—This grand exhibition of Chrysanthemums was held Tuesday, November 2, and there was a great display of plants and cut flowers. The kinds which obtained the prizes were as follows:—

Best 6 large flowered varieties. These were from Mr. Wortley, and were, *Mount Etna*, *Christine*, *Vesta*, *Defiance*, *Pilot* and *Annie Salter*.

Best 6 Pompones came from Mr. Holland, and contained *Dr. Bois Duval*, *Cedo Nulli*, *Duraflet*, *Bob*, *General Canrobert* and *Riquiqui*.

Of 12 cut blooms, Mr. Wortley sent the best lot. They consisted of *Leon Le Guay*, *Queen of England* (a fine flower, which measured exactly fifteen inches in circumference), *Pio Nono*, *Formosum*, *Hermione*, *Arigina*, *Dr. Boisduval*, *Dupont de l'Eure*, *Aristée*, *Luteum* and *Stella globosa*.—(*Gard. Chron.*)

Gossip of the Month.

NEWBURYPORT HORTICULTURAL SOCIETY.—At a late meeting of the Newburyport and Essex North Horticultural Society the following officers were elected for the ensuing year:—**DR. E. G. KELLY**, President; **WM. ASHBY**, and **A. W. MILTIMORE**, Vice Presidents; **W. W. CALDWELL**, Treasurer; **ALFRED HORTON**, Secretary.

DR. GRANT'S DESCRIPTIVE CATALOGUE OF GRAPES for sale at his nursery at Iona, N. Y., has been received, and contains much useful information. He gives a brief account of the several kinds enumerated, with some interesting prefatory remarks on the improvement of the vine during the last twenty years, and the injurious effects of excessive propagation.

DOWNING'S EVERBEARING MULBERRY was raised from seed of the *Morus multicaulis*. As the latter is not perfectly hardy in the latitude of Boston, it would be important to know whether this seedling partakes of the character of the parent; if it does it will be a source of regret, as we esteem the English Black Mulberry a very delicious fruit, and a variety which comes so near to it in excellence as Downing's Everbearing would be a most valuable acquisition, if as hardy as the latter kind. As Dr. Grant now offers the trees for sale we shall have an opportunity to test its hardiness.

LAPARGERIA ROSEA, a most beautiful greenhouse climber, has flowered abundantly in the collection of C. Van Voorst, Esq. of Jersey City. His gardener, Mr. Fleming, gives the following directions for the management of the plants:—"Some people treat it as a stove plant. There it seems only to exist, but not to thrive. We find it to do best in a house kept as cool as possible—not to admit frosts—and in summer set against a wall with a north exposure, being entirely shaded from the sun, and care taken that the soil does not get too wet. It requires plenty of pot-room, having large roots in proportion to the tops. The soil used is about equal portions of loam and leaf mould, with a liberal admixture of sand and broken charcoal."—(*Country Gentleman*.)

BUIST'S CRIMSON PERFECTION VERBENA.—A new seedling, under this name, has been raised by Mr. R. Buist, nurseryman, Philadelphia. It is described as a bright scarlet crimson, with a white eye, surrounded with a dark crimson circle; corymb fully three inches in diameter; flowers nearly circular, far surpassing Giant des Betailles in shape, color, habit and fragrance.

LANDSCAPE GARDENING.—Mr. H. Grundel, recently gardener to Mr. H. Harris of Roxbury, offers his services “for the planning and laying out of city, suburban and villa gardens,” &c., and refers to Messrs. Wilder, Breck & Co., Hovey & Co., and others. Mr. Grundel’s well-known qualifications as a gardener, his experience in some of the best situations in Germany, where he had an opportunity of studying the remarkable designs of Louis Schell, one of the first landscape artists of the present century, combined with good taste, qualify him for the duties which he assumes.

Horticultural Operations

FOR DECEMBER.

FRUIT DEPARTMENT.

THE unseasonable cold weather of November caught many gardeners “napping,” and put almost an entire stop to all out-door operations. A week of such severe weather we do not recollect for a long period. As low a temperature is not uncommon, but its continuation is rare: for nearly ten days the ground remained frozen two to four inches deep, scarcely thawing from morning to night. As we write, it is more moderate, and we cannot but expect two or three weeks of favorable weather to make up for the loss of half a month, and thus admit of the completion of work already half done. No time should be lost in getting everything secured for the winter.

GRAPE VINES in the earliest houses will now be advancing towards maturity, and will begin to color up. Keep up a good day temperature, and be more sparing of water. Stop laterals, if pushing too fast, and see that the border is kept at a good temperature by fresh fermenting materials. Vines in graperies and greenhouses should be pruned this month, cleaned of all insects, and put in order for starting in February. Cold houses require but little attention now.

FRUIT TREES may yet be transplanted, if the weather continues favorable.

RASPBERRY BUSHES should be covered up.

STRAWBERRIES should be covered.

MANURE should now be placed around fruit trees, in order to secure them from deep frosts, and enrich the soil.

PEACH and other fruit trees, in pots, may be brought into the forcing house this month.

PEAR AND APPLE TREES, infested with the scale, may now be washed with a solution of potash water, whale oil soap, or lime and sulphur.

FLOWER DEPARTMENT.

The early and severe frosts have compelled the housing of many plants which ordinarily are kept out till December. Keep the houses cool in order to prevent them from being unduly excited before the proper period. Repotting should now be commenced in earnest, and all work forwarded as much as possible.

CHRYSANTHEMUMS, going out of flower, should be removed to a frame where they can have a slight protection from severe frosts.

CAMELLIAS, now coming into bloom, should be watered more liberally. Cuttings may be put in now.

AZALEAS should yet be sparingly watered, in order to get thoroughly ripened wood.

PELARGONIUMS should be shifted at once into larger pots, especially those intended for early blooming. Young stock should also be repotted. Stop all strong shoots, place near the glass, in a cool airy part of the house, and water rather sparingly for a time.

CINERARIAS should have a shift into larger pots.

JAPAN LILIES may be potted this month.

CHINESE PRIMROSES may be repotted.

HOLLYHOCKS, now taken up and potted, may be propagated from cuttings. Seeds sown now will bloom next season, if forwarded in small pots.

CALCEOLARIAS should be repotted.

ROSES, from the frames, may now be brought into the house for early bloom.

BEDDING PLANTS, raised from cuttings, should now be potted off, and placed on an airy shelf, near the glass.

COMPOSTS AND SOILS, for use during the next three months, should be secured from frost, where they will be ready for use.

FLOWER GARDEN AND SHRUBBERY.

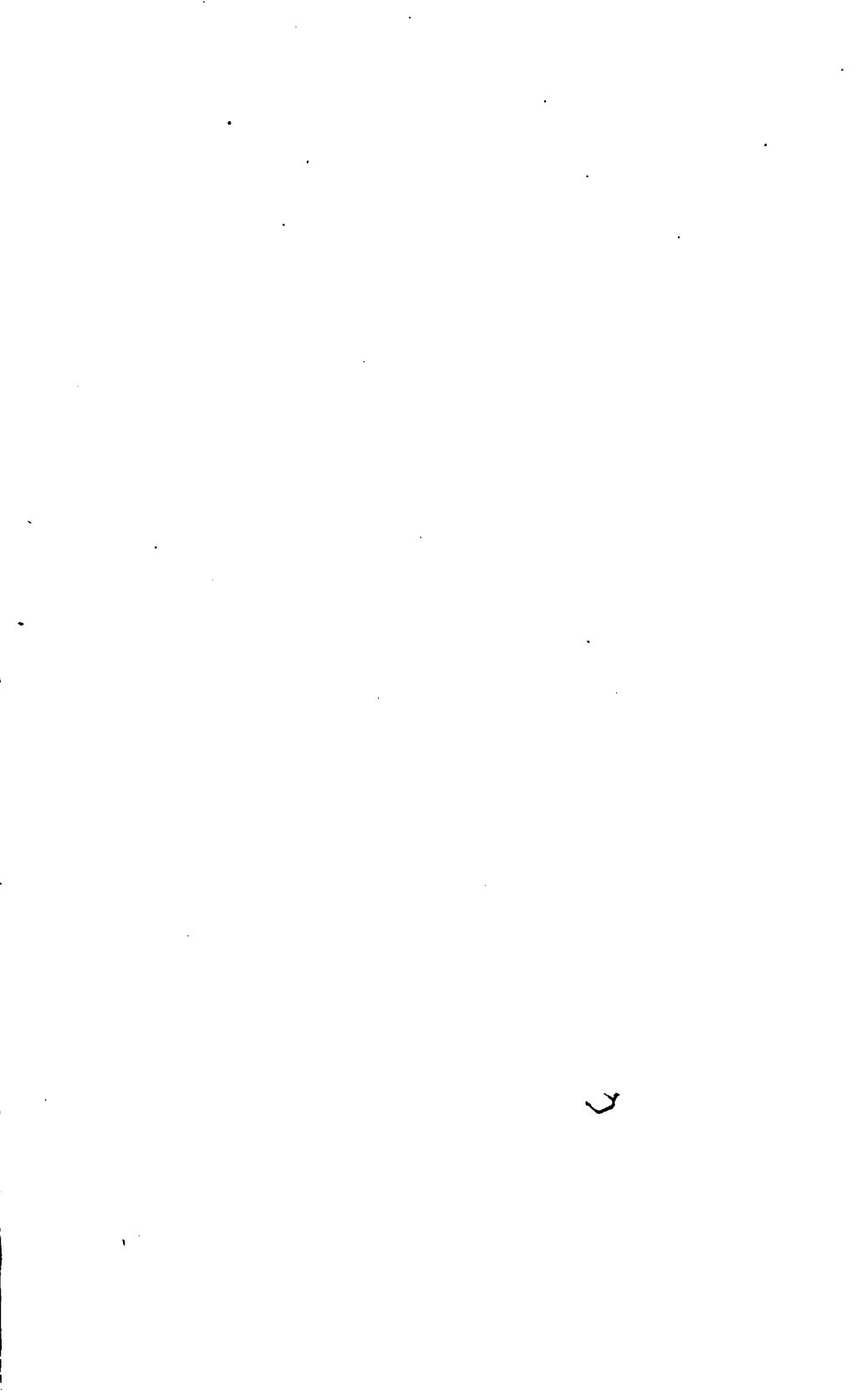
Though the verdure of the lawn is at last nearly gone, and the flower borders possess but little attraction, still, they should not be entirely neglected. As long as the weather continues fine continue to rake and clean up all dry leaves, and keep the walks in good order. Protect all plants with a good covering of strawy manure. Finish planting early flowering bulbs, if not already done, and trench and prepare ground for spring work; ridge up stiff ground, as the frost is one of the best ameliorators of such a soil.

JAPAN LILIES, and all other bulbs, should be planted, if yet out of the ground. Protect at once with a good thick covering of leaves or litter of some kind.

CARNATIONS, and other plants in frames, should have a light covering of leaves, and protection from rains and snows by sashes or shutters. Protect all kinds of plants which require it by a covering of manure or leaves.

PERPETUAL ROSES should be pegged down to the ground, and covered with earth, tan, or manure.







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